

Successful Construction Methods

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GENERAL CONSTRUCTION—HIGHWAYS—BUILDINGS
ENGINEERING—INDUSTRIAL

WILLIAM JABINE
Editor

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NUMBER 11

Here's a Husky Hybrid

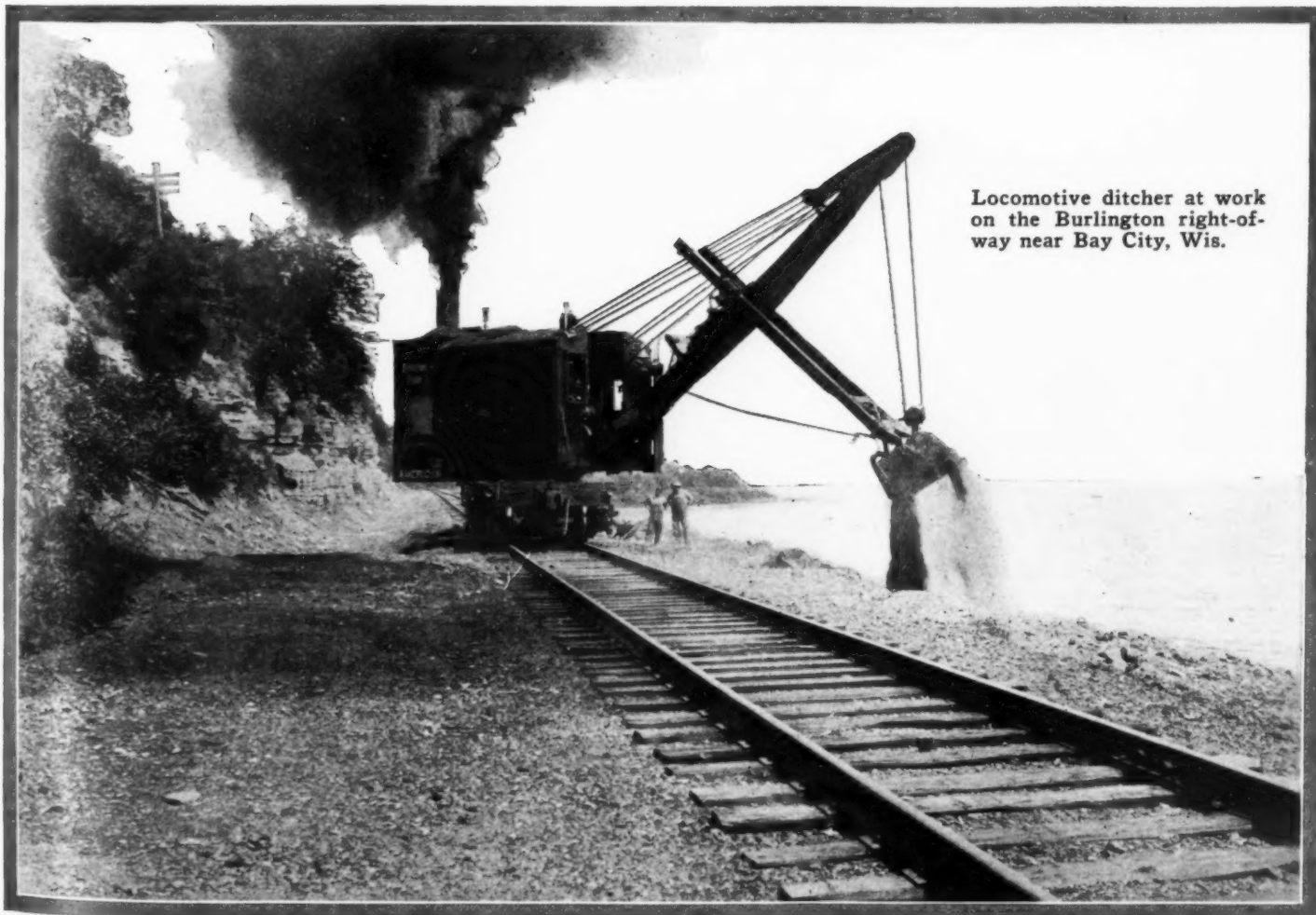
Offspring of Locomotive and Steam Shovel Inherits Best Qualities of Both Parents

A RAILROAD ditcher that can move along at a speed of 19 miles an hour and haul its work train with it is shown in the photograph at the bottom of this page hard at work on the Burlington Route at Lake Pepin near Bay City, Wisconsin. It is engaged in digging a ditch 14 ft. across the bottom, 4 ft. deep and 18 ft. from shoulder to shoulder.

On the day the photograph was taken it dug 250 ft. of this ditch in 6 hours time. The work train hauled by this American locomotive and ditcher consists of two dump cars, water and fuel tender and caboose. Its hauling capacity is

even greater than that, however, and on some recent work done at East Dubuque, Iowa, F. D. Merrill, conductor of the ditching train, reports that it handled 18 cars loaded with excavated material.

The chief advantage gained by the use of this outfit is, of course, the elimination of the work locomotive and its crew, and the Burlington maintenance of way department figures that this amounts to a saving of from \$60 to \$70 a day. It also makes the maintenance of way department independent of the motive power department, an arrangement that saves considerable time.



Locomotive ditcher at work
on the Burlington right-of-
way near Bay City, Wis.



© Herbert

Above—Boys will be boys in the construction business. These care-free young men are perched on top of the steel gas tank shown at the left, which is more than 300 ft. high. It is on the west side of New York



At left — Construction equipment played a big part in clearing up the wreckage after the Miami hurricane

© International

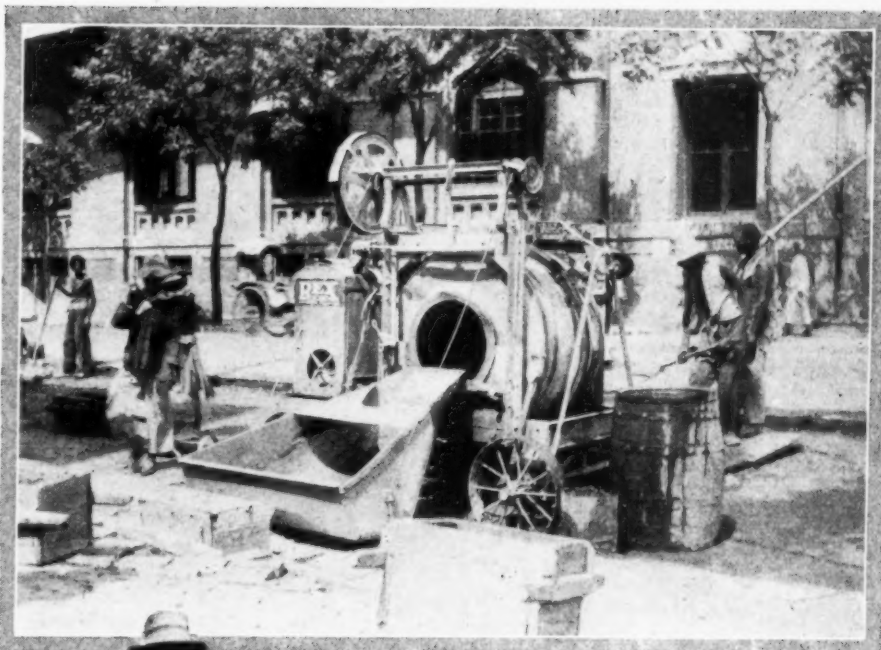
Below—Work on the new International bridge across the Niagara River near Buffalo is so well advanced that the opening is set for July, 1927

© Gallery





Above—All the acrobatic constructors do not live in the United States. Here is one amusing the Paris crowds by doing stunts high up above the Seine



Above—Although a mixer made in the United States is being used by Hua Sheng & Co. in building the new Yokohama Specie Bank in Tientsin, China, the methods of getting aggregates into the skip are somewhat antiquated. The gentleman shown at the left with two small baskets slung from his shoulders is carrying sand and stone to the mixer

Below—This American excavator has been working on the Strand in London and managed to get a special writeup in one of the leading London daily newspapers





Ready for the Winter Rush

New Florida Hotel on Key in Gulf of Mexico Finished on Time—Steel Mast Handles All the Concrete

THE Don Cesar, which is nearing completion at Pass-A-Grille, Florida, is a typical example of the modern hotels which are being built in that state to take care of the winter visitors. It is situated on a key west of St.

Petersburg and overlooks the Gulf of Mexico on one side and Boca Ceiga Bay on the other. Carlton W. Beard of St. Petersburg, the contractor who is building the Don Cesar, sent the accompanying photographs to *Successful Methods* with a brief description of the job.

Work was begun in August, 1925, and has been pushed steadily forward with a view to having the hotel ready for occupancy as soon as the winter season gets under way. Careful planning by Mr. Beard kept the job on schedule and the photographs, which were taken very recently, show that the big structure will be ready on time.

Because of its situation, materials, such as gravel, steel and cement, have to be brought from St. Petersburg by barges. The mixing plant was set up at the base of an Insley steel mast 160 ft. in height, and as a road intervened between the mast and the dock where the barges were unloaded, a conveyor was carried over the road on a bridge. This conveyor discharged into the measuring bins above the mixer.

The problem of getting sand was an easy one, and a small inclined railroad line ran from the mixer to the beach where sand was the main feature of the landscape.

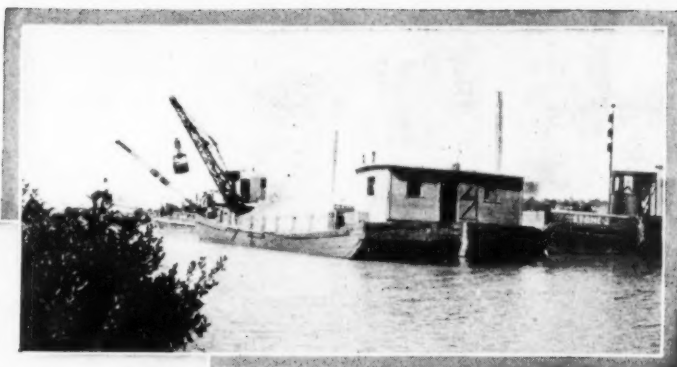
All of the reinforced concrete was poured from the steel



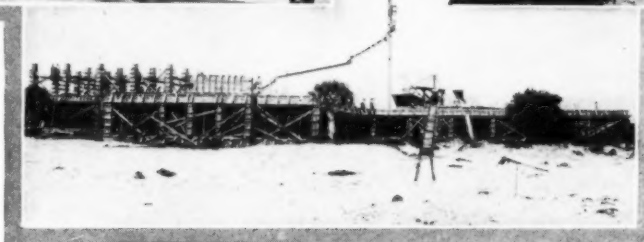
The man who built the Don Cesar—Carlton W. Beard, contractor, in front of his Florida home



Above—The bridge at left carried the gravel over the road that separated the dock and mixing plant



Above—Materials were brought from St. Petersburg in barges.



At left—Pouring concrete for the lower floors.

tower which was strategically placed at a point where all parts of the building could best be reached. Chutes and concrete buggies were used for getting the concrete into place. At times 230 ft. of chute were necessary. All of the brick and tile which went into the building were made on the grounds by an Anchor brick and block machine.

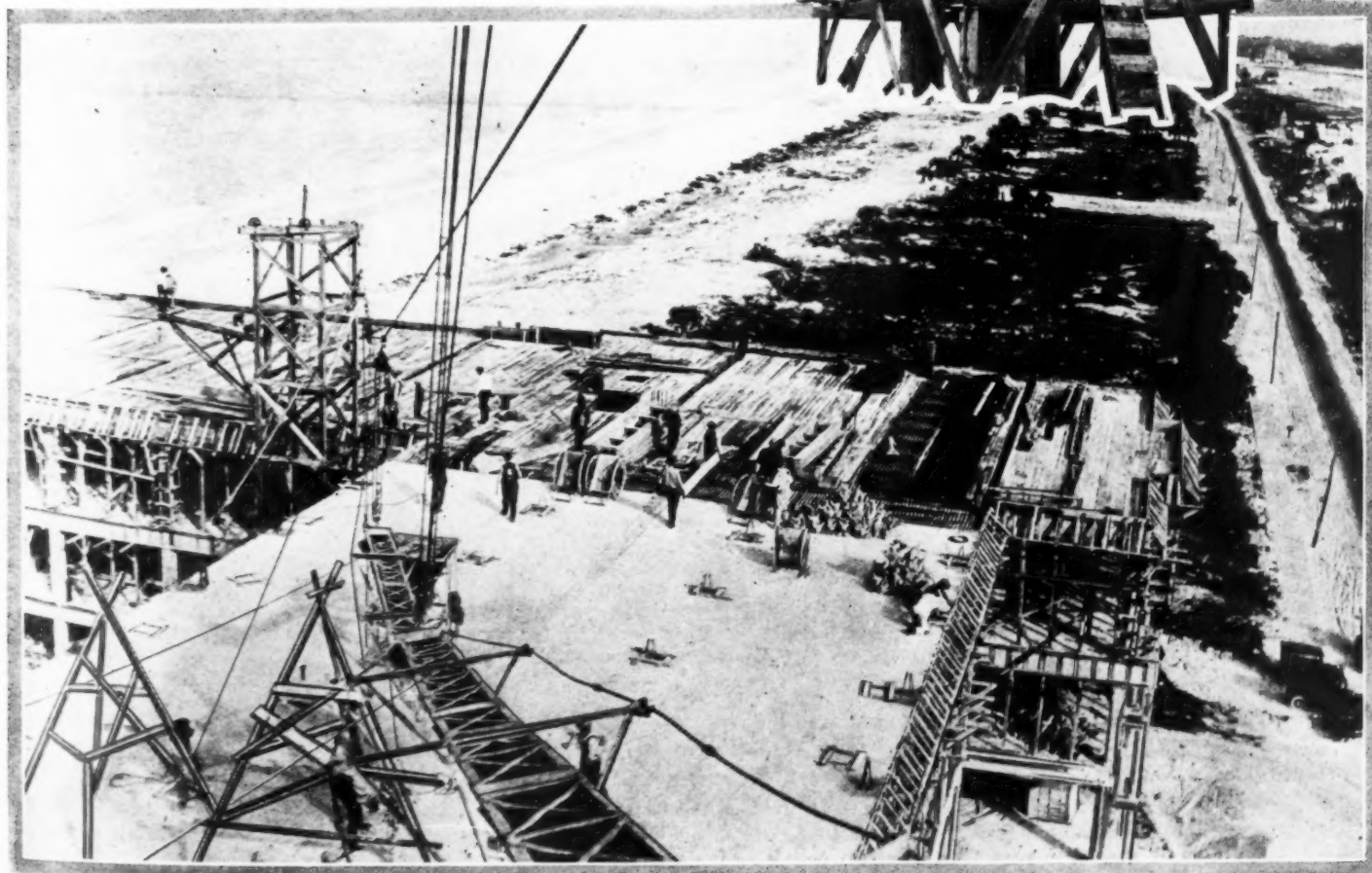
When completed the hotel will contain 350 bedrooms, each with a private bath. An unusual feature is the situation of the dining room which is on the fifth floor and is so placed that a large roof garden can be utilized in connection with it. The Thomas J. Rowe Corporation of Pass-A-Grille is the owner of the Don Cesar.

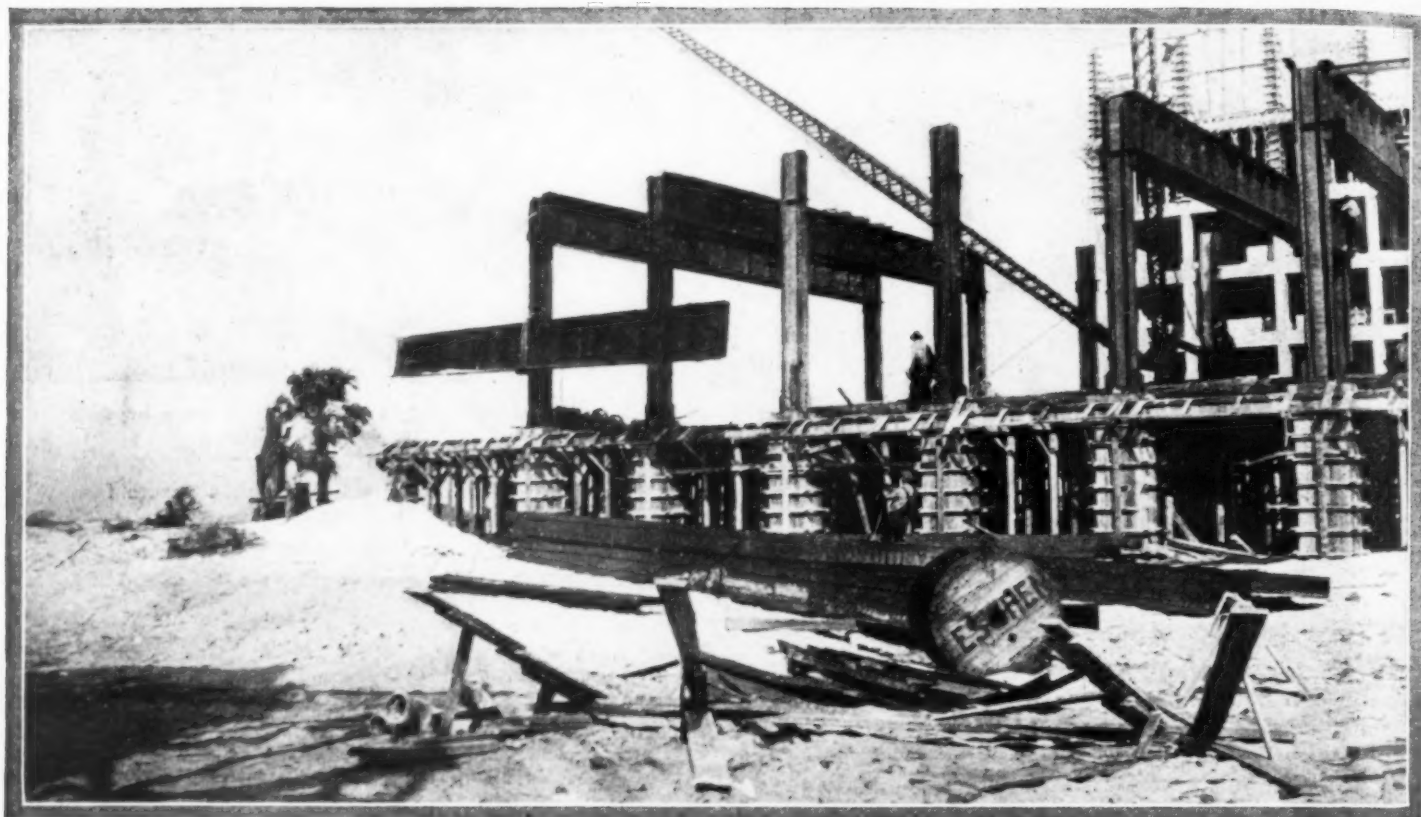
Mr. Beard reports that although the edge of the recent hurricane hit Pass-A-Grille, the new hotel was not damaged

in any way. The wind blew about 70 miles an hour, and the storm broke while the tile workers were engaged on the roof of the hotel. In spite of the high wind and the



Looking down on the job and looking up to Mr. Beard and his superintendent, Claude J. Key.





The heaviest steel used in the building of the Don Cesar went into the roof of the ball room. One of the girders being swung into place

fact that the tiles had just been laid, only one or two blew off. An unfinished building is usually not fully prepared to face a 70-mile gale, and the fact that only trifling

damage was done was about the best evidence possible that Mr. Beard and his organization did a thoroughly workman-like job in the construction of the Don Cesar.

Headquarters for Paving Materials

TWO concrete mixing plants and one asphalt plant are maintained by the Central Material and Supply Company of Oklahoma City, Oklahoma. The photograph, taken by Douglas W. Young, shows the layout of the company's yard. The asphalt plant is at the right and is supplied with

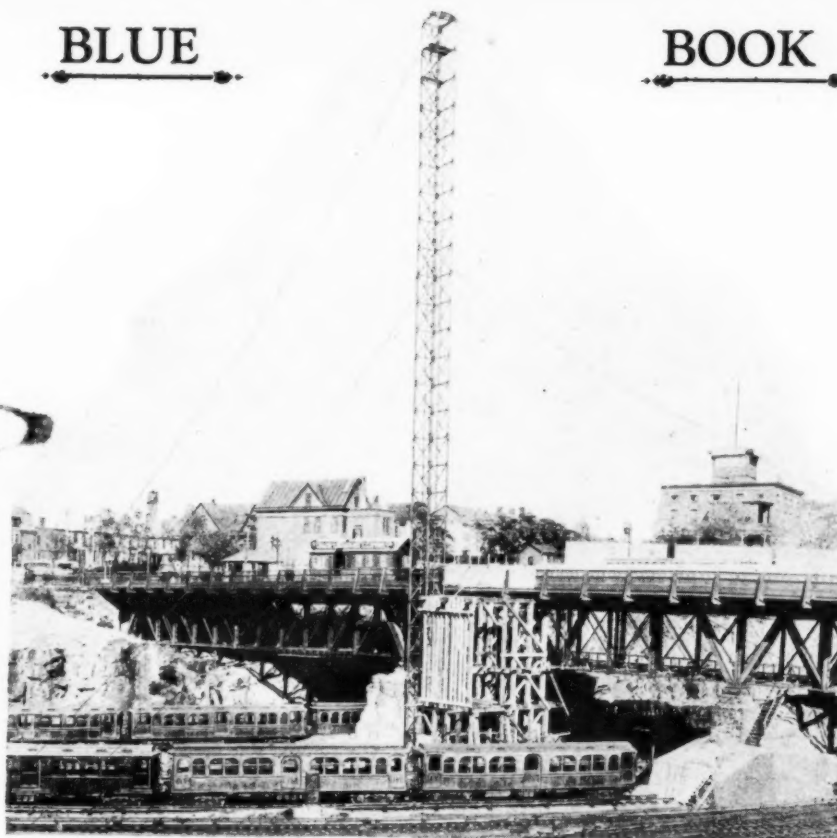
material by the large derrick operated by an electric hoist. This derrick also supplies a 1-yd. concrete mixer in the building at the left. The second mixer which is a 2-yd. affair, is supplied by the derrick beyond the railroad tracks. Materials are brought in on the two tracks.



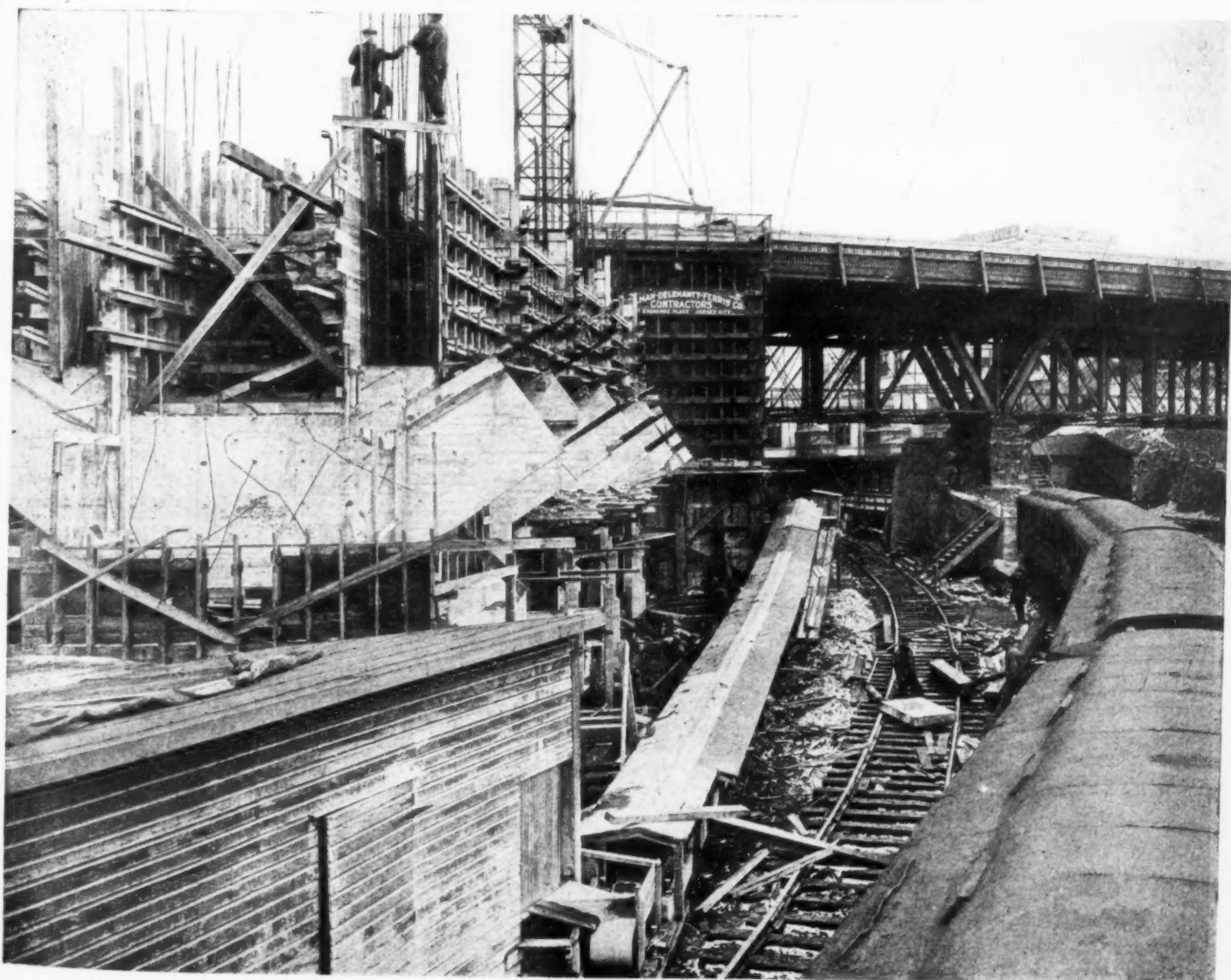
BLUE

BOOK

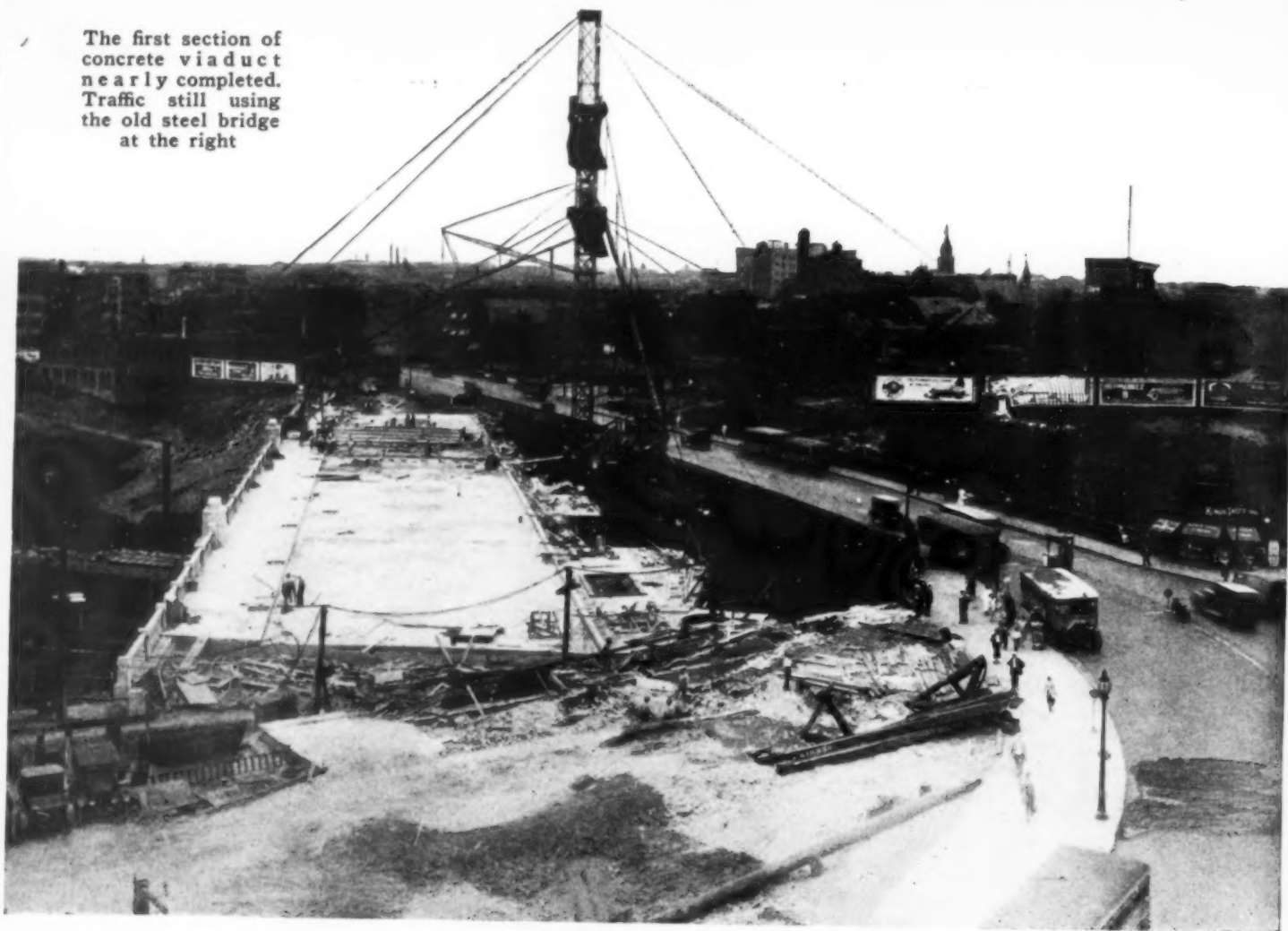
Start of work on Hudson County Boulevard Viaduct, Jersey City, N. J. Tower in place and bins under construction. Materials were dumped from old steel bridge directly into bins and from them into mixer underneath



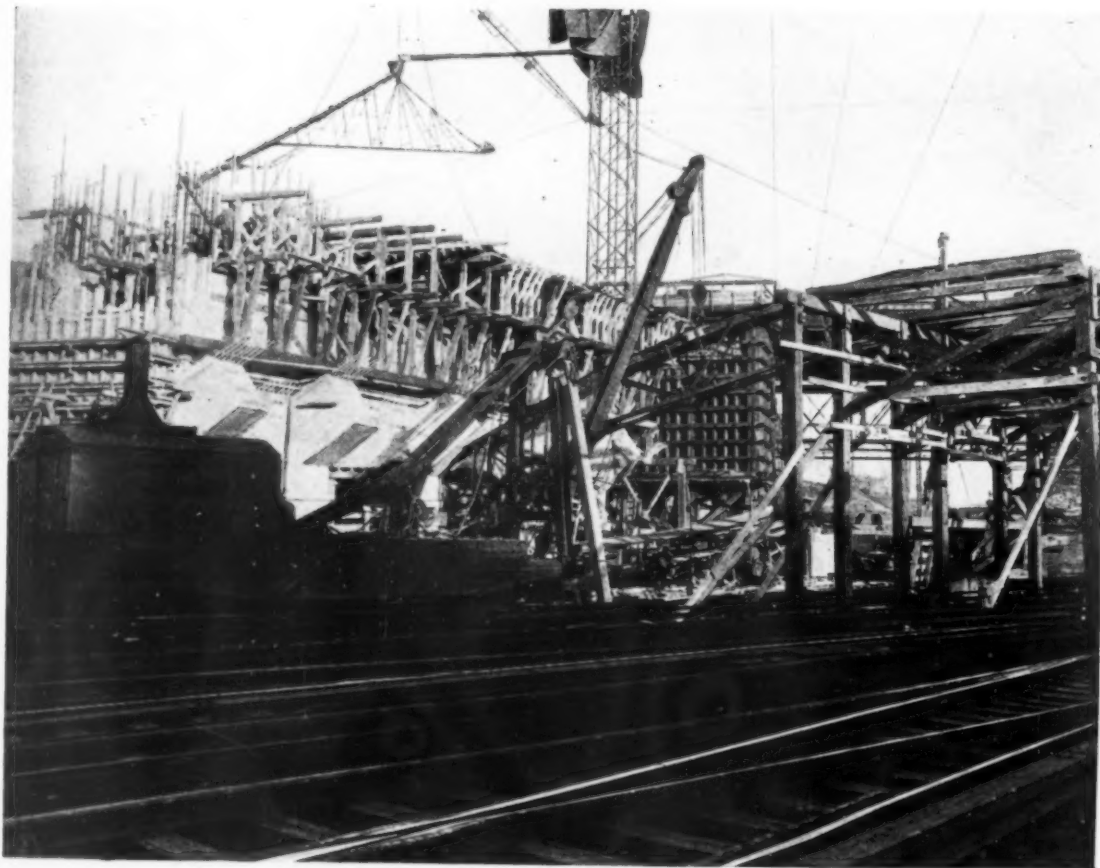
Center pier for first six ribs with forms for columns to support floor slab under construction at left is shown in the photograph at the bottom of the page. The material bins and conveyor from cement house to bins are clearly shown



The first section of
concrete viaduct
nearly completed.
Traffic still using
the old steel bridge
at the right

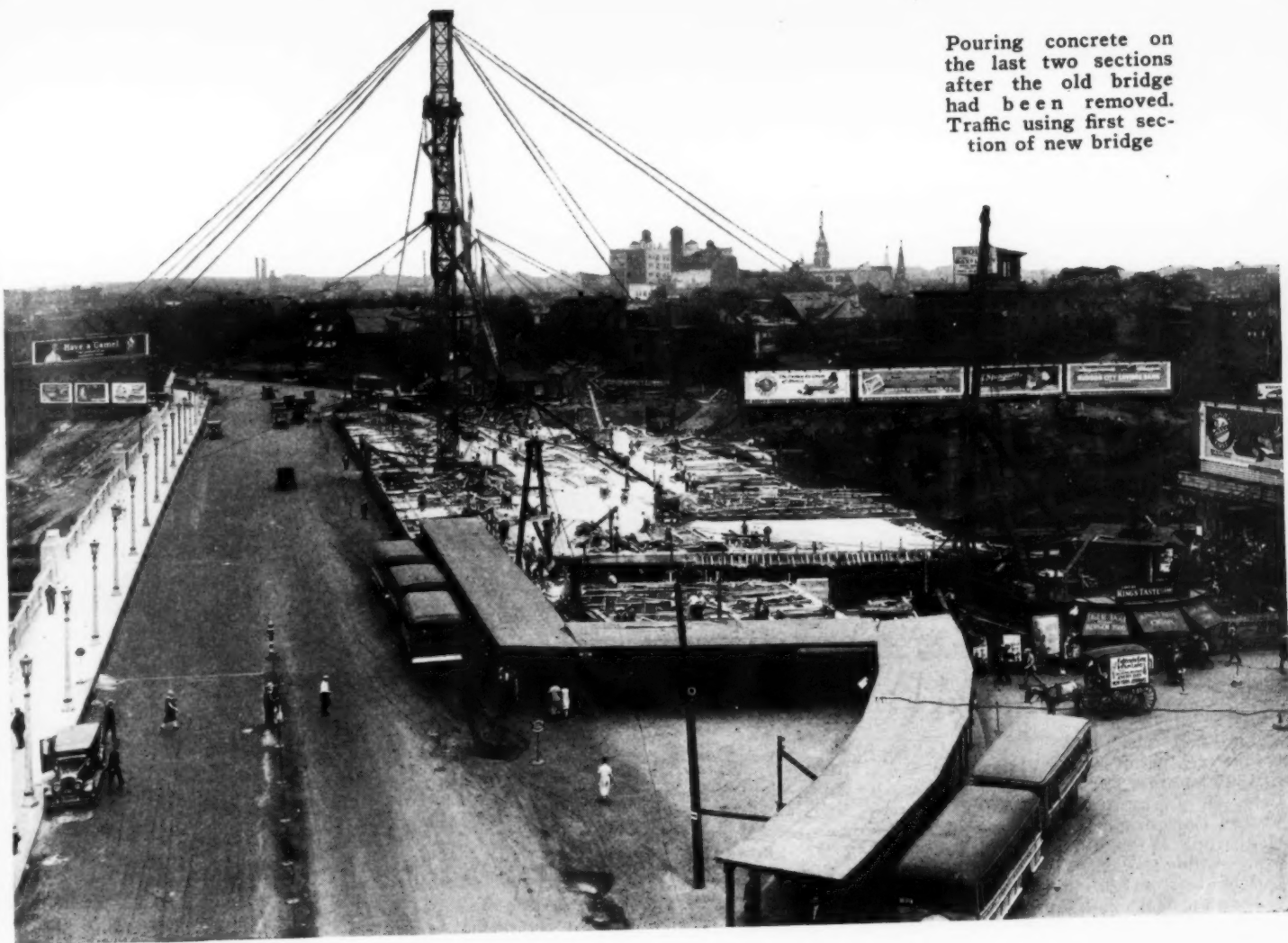


Hudson County Boulevard Viaduct, Jersey City, N. J.



Steel centers being
erected to support con-
crete ribs. The false
work between the
tracks was removed as
soon as the steel cen-
ters were connected as
the railway had to be
kept open for traffic

Pouring concrete on
the last two sections
after the old bridge
had been removed.
Traffic using first sec-
tion of new bridge



Hudson County Boulevard Viaduct, Jersey City, N. J.

Removing the old steel
bridge to make room
for the new concrete
structure. In some
cases the web posts
were found entirely
disconnected from pins
and had to be held in
place with cable





Hudson County Boulevard Viaduct, Jersey City, N. J.

The last section of a concrete arch bridge replacing a steel structure built in 1896 has just been completed in Jersey City, N. J., by the Stillman-Delehanty-Ferris Company. The new bridge carries the Hudson County Boulevard across the tracks of the Pennsylvania and Hudson and Manhattan railroads.

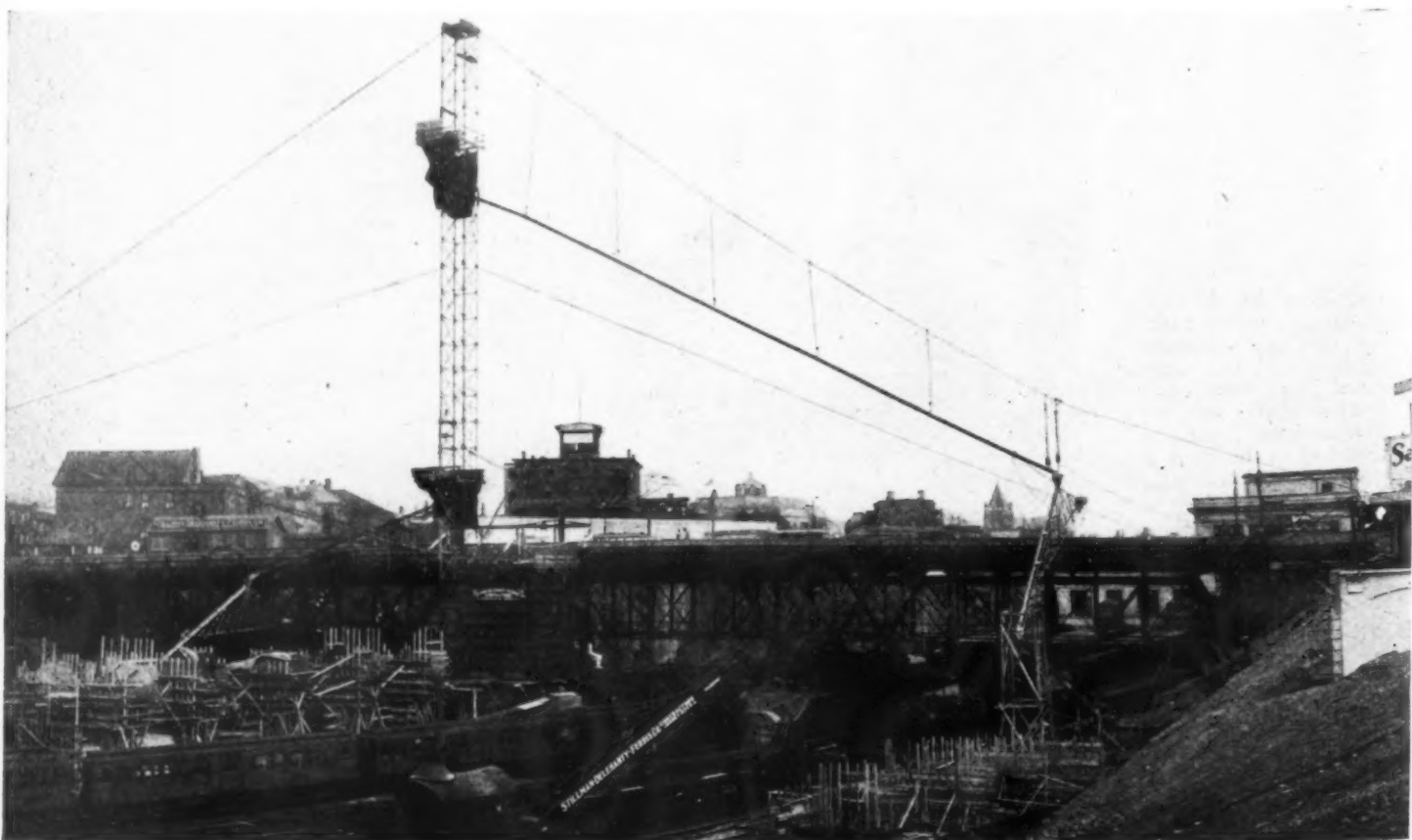
As may be seen from the photographs on this and the other Blue Book pages, the bridge was built in three sections and the space in which it was carried on was limited at all times by the fact that the heavy traffic on both highway and

the two railroads had to be taken care of. At certain times of day the trains passing underneath ran at 2 min. headway, and the Hudson County Boulevard carries a heavy volume of traffic.

The old steel bridge was left standing while the first section of the new concrete bridge was built. As soon as the new section was ready it was opened to traffic and the old bridge was removed to make way for the other two sections. A centrally located concrete tower 180 ft. in height placed all of the concrete used for the entire job, about

20,000 cu.yd. A material bin with a capacity of 100 yd. of stone and 50 yd. of sand was placed close to the old bridge so that trucks could back off the old bridge and dump directly into the bins. The mixer was under the bins and discharged directly into the tower bucket. As it was impossible to place the cement shed near the mixer a belt conveyor was used to take the cement from the house to the charging floor.

These photographs were sent to *Successful Methods* by E. W. Stevens, chief engineer for the contractors.

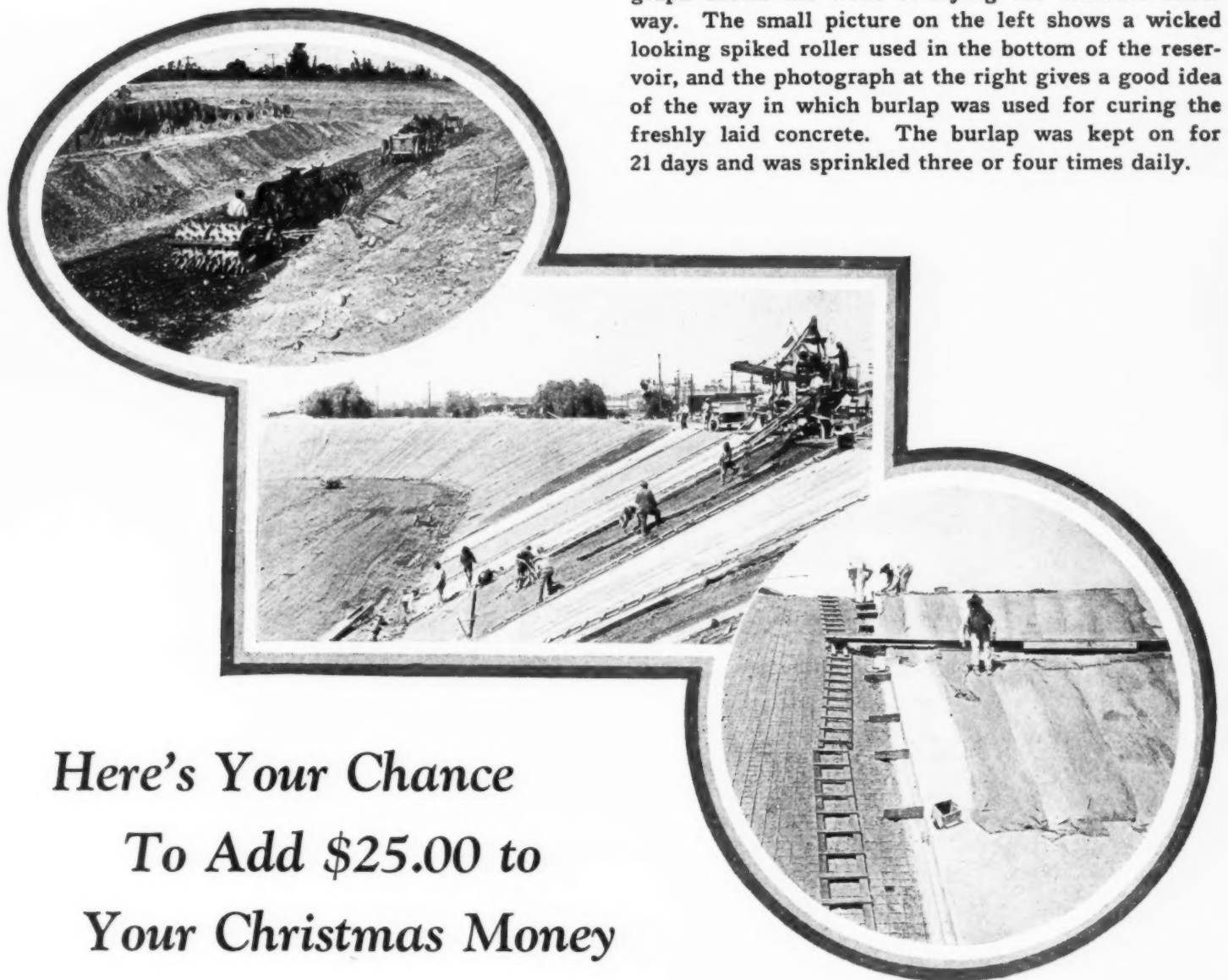


California Captures Our Cash

A TRIO of photographs taken by J. M. Galvin, Assistant Water Superintendent of Ontario, California, wins the November photographic contest prize of \$25.00. In pursuance of the policy of his department, Mr. Galvin has been taking progress pictures of all types of construction for the

city of Ontario. These photographs are kept on file in the department and are proving a most useful record.

The job on which the prize photographs were taken is the construction of a 10,000,000-gal. reinforced concrete reservoir. The work is being done by George Herz & Co. of San Bernardino, Cal. The center photograph shows the work of laying the concrete under way. The small picture on the left shows a wicked looking spiked roller used in the bottom of the reservoir, and the photograph at the right gives a good idea of the way in which burlap was used for curing the freshly laid concrete. The burlap was kept on for 21 days and was sprinkled three or four times daily.



Here's Your Chance
To Add \$25.00 to
Your Christmas Money

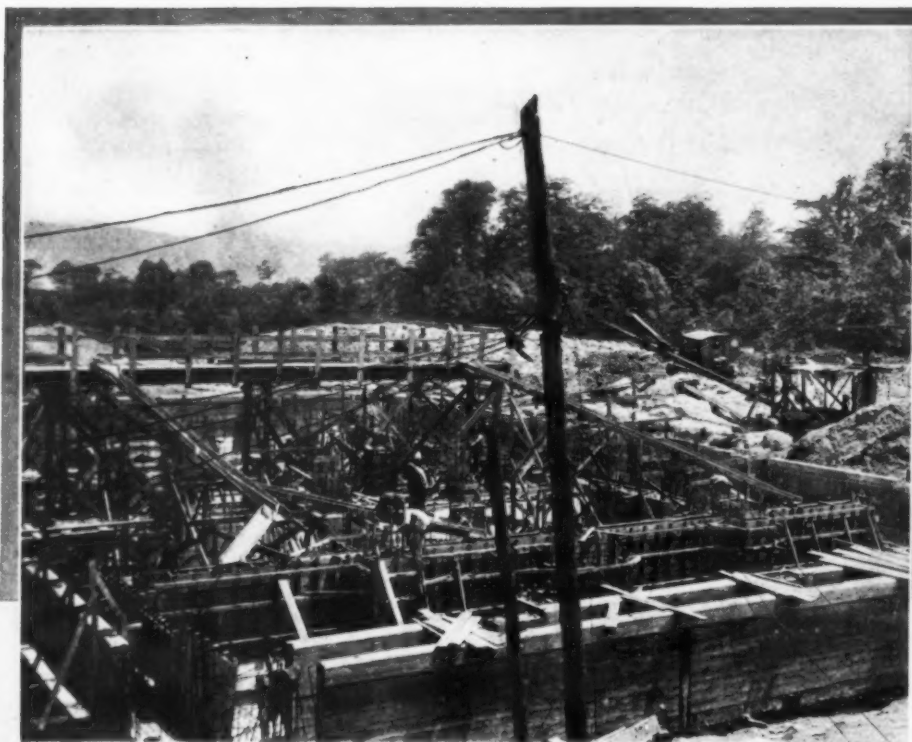
IF AN addition to your Christmas funds would be welcome, get out your camera and enter the December photographic contest. *Successful Methods* is offering its fifth \$25.00 prize for the photograph most suitable to its needs taken by a man actually employed on the job shown in the photograph. Photographs should be accompanied by a brief description of the job, giving location, name of contractor, name of owner, size of job, when begun, when finished, etc. And don't forget your own name, your address and the nature of your work. THE EDITOR of *Successful Methods* will act as judge and will determine which photograph is best suited to the needs of this magazine.

ALL PHOTOGRAPHS should be sent to *Successful Methods*, McGraw-Hill Publishing Company, Tenth Avenue at 36th Street, New York City, and plainly marked "Photographic Contest." ANY PICTURE that is to be considered in awarding the \$25.00 prize for the December issue of *Successful Methods* must be in this office not later than Wednesday, November 10th. Those arriving after that date will be considered as entered in the January, 1927, contest. All contest photographs, other than the prize winning photograph, which are used in *Successful Methods*, will be paid for at the rate of \$1.00 each. Please don't send photographs of jobs that are now ancient history. We want up-to-date pictures.

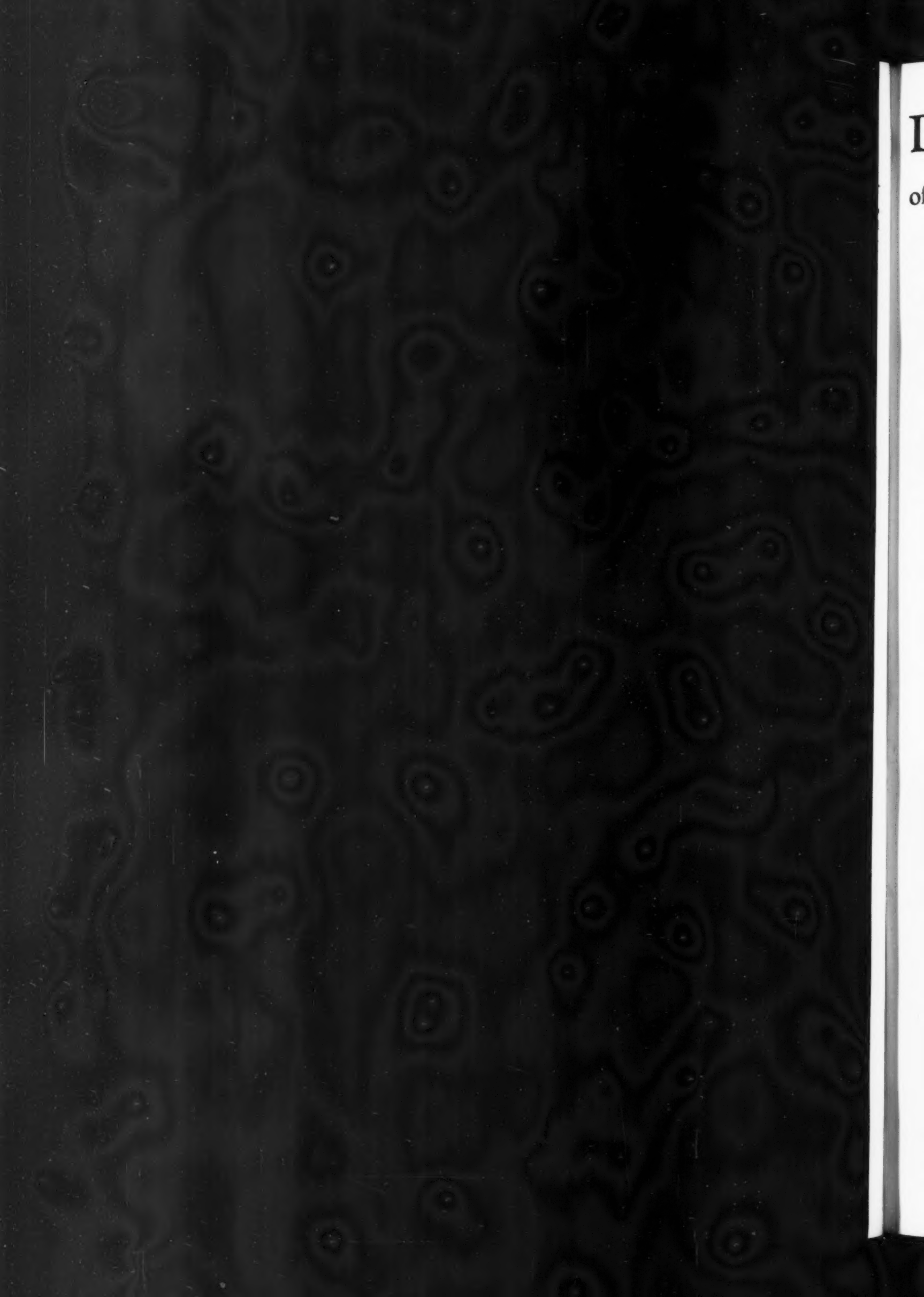
Building a Modern Sewage

New Castle, Pa., Provides for Needs

Pouring the concrete for the Imhoff tanks. The large picture shows the beginnings of this work with the hopper bottoms already in place in the excavation. The small photograph at the right shows the work at a later stage when the concrete was brought out on a runway in buggies and then placed through chutes.







I
of

Disposal Plant

of Population of 60,000

NEW CASTLE, PENNSYLVANIA, is building a modern sewage disposal plant which will take care of the requirements of a population of 60,000. The work was begun in July, 1925, and probably will be completed this month. The contract was awarded to the Pitt Construction Company of Pittsburgh, Pa., and the engineers who have oversight of the work are Fuller & McClintock of New York and Philadelphia.

The plant will include six Imhoff tanks, each having three hoppers 24 ft. square, and sludge drying beds will cover 48,000 sq.ft.

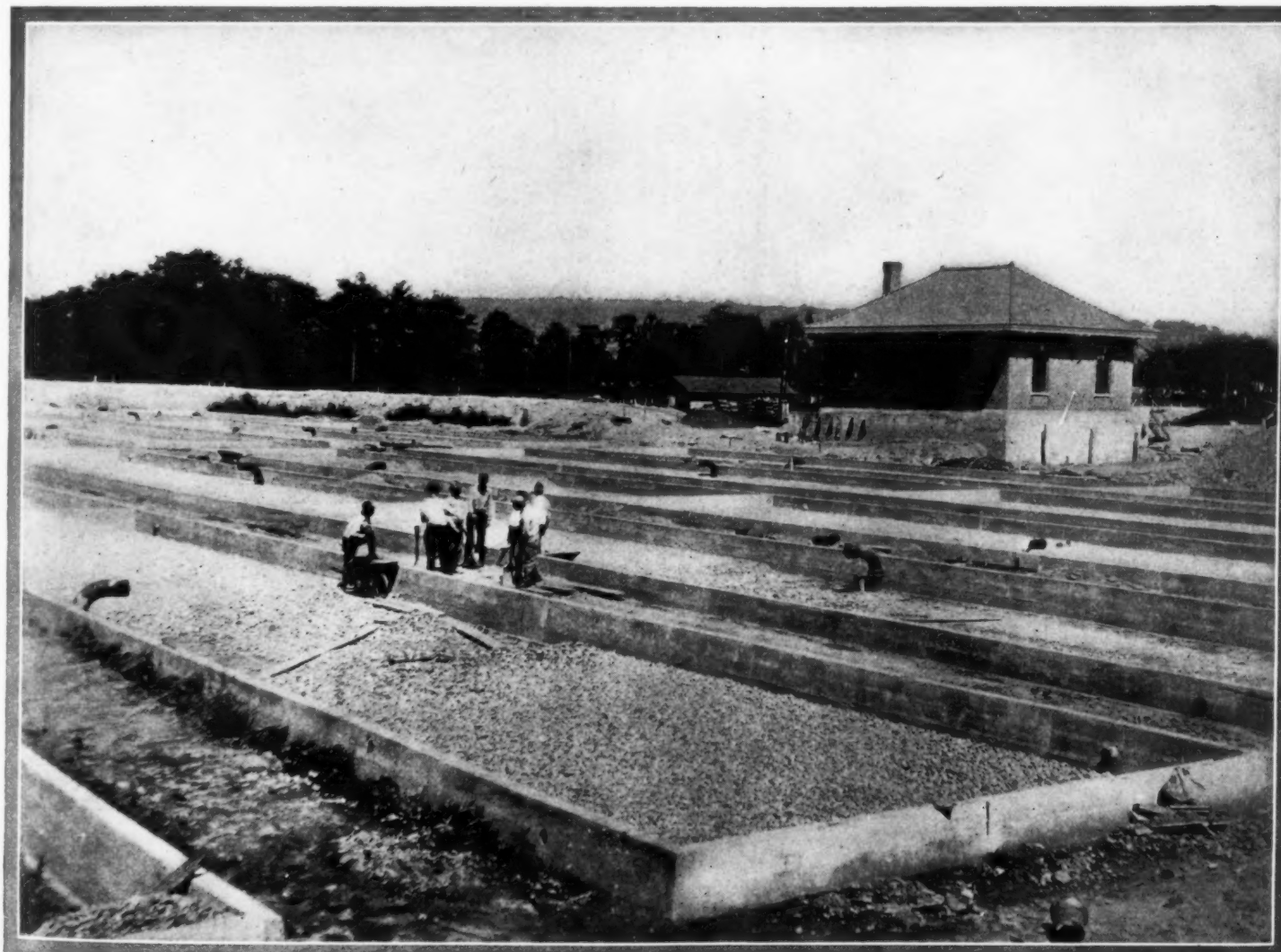
The photographs which accompany this article show various details of the construction. They were taken by A. A. Jones who is the resident engineer in direct charge of the work for Fuller & McClintock. The two photographs on the opposite page show clearly the methods used in constructing the Imhoff tanks. Concrete mixers were set up on the ground level and the concrete was placed through chutes. Those portions of the tanks nearest the mixers were poured first and a runway later was built on the level with the mixers. Concrete was then taken out on this runway in buggies and from there placed through chutes. The upper photograph on the opposite page shows this runway.

The pictures on this page give a good idea of the appearance of the work as it nears completion.



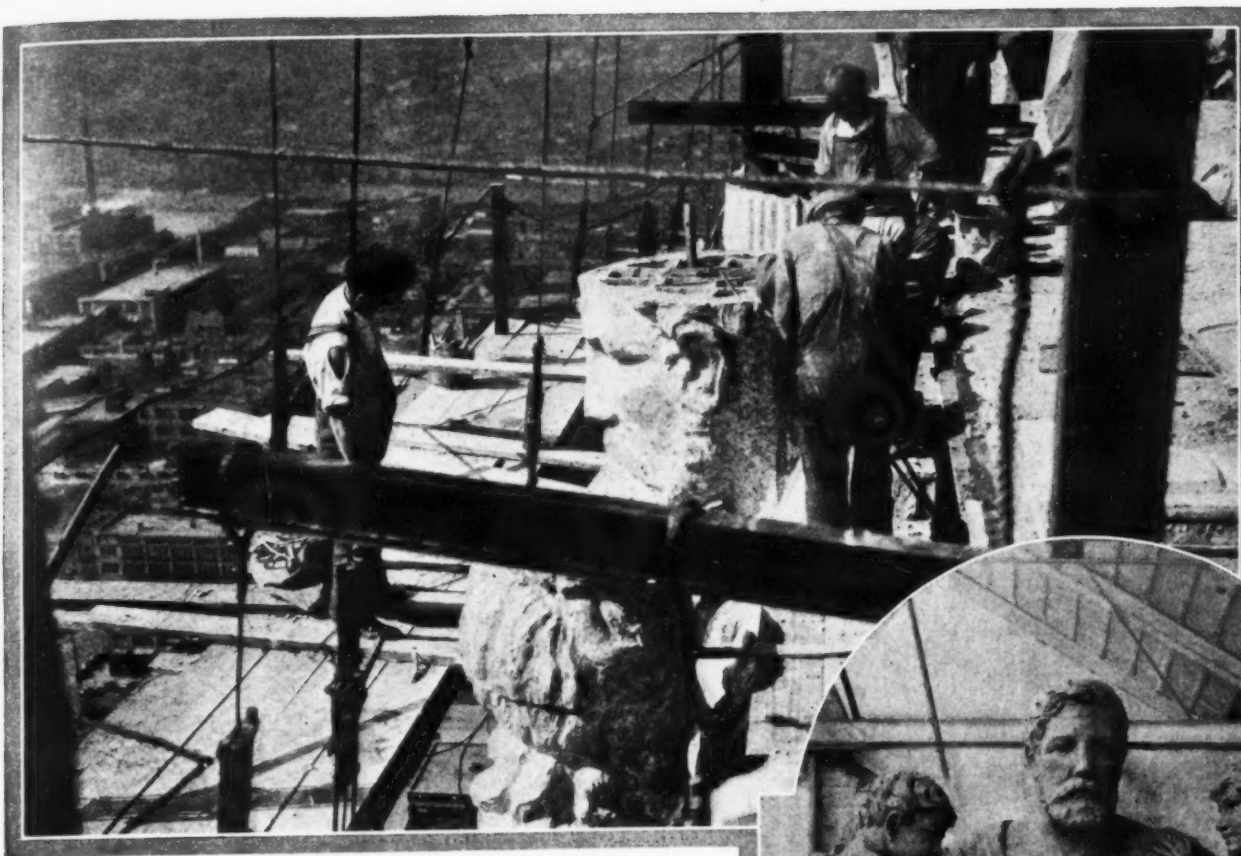
Above—Some of the completed concrete work with the pumping station in the background.

Below — The workman putting the finishing touches on the sludge drying beds.





NEARLY 500 ft. above the streets of Columbus, Ohio, four great groups of statuary made of terracotta have just been set in place on the American Insurance Union building.



There Are Giants In These Days



EACH group is 24 ft. high. A full-size model was made, and each group was cast in 176 sections by the Northwestern Terra Cotta Company of Chicago. Maxfield H. Keck was the sculptor.



Realtors Provide Profitable Work for H



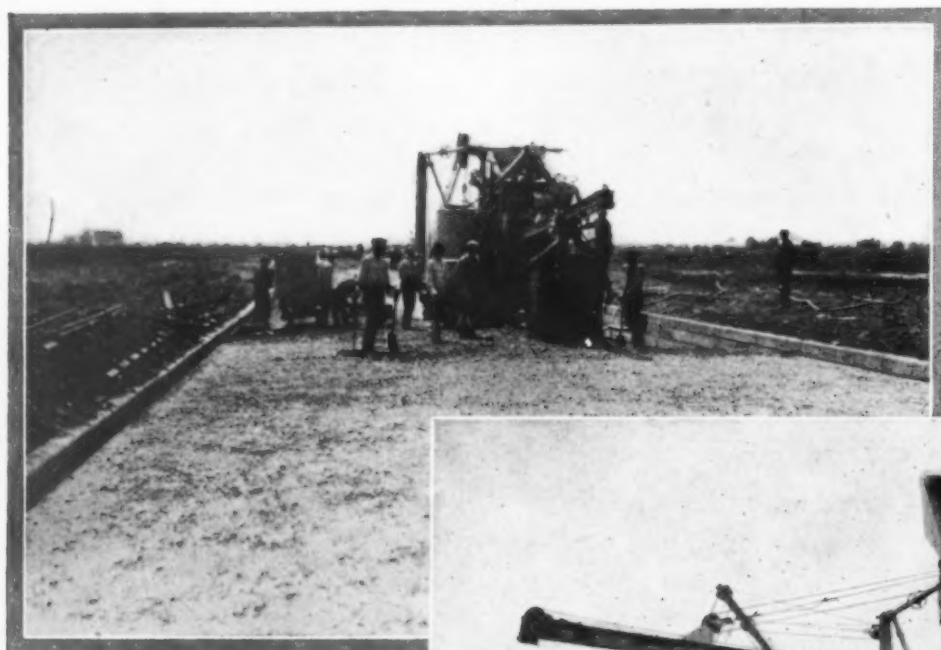
Land Development Calls for Big Scale Paving Programs

SOME of the biggest paving jobs in the country are now being done on real estate developments. Although the average subdivision does not cover any great amount of territory, it is generally so interlaced with streets that the necessary paving includes several miles of work and requires as much plant and equipment as a big cross country road job.

The photographs which accompany this article were taken on the Robert Oakman subdivision in Detroit where the Ferdinand Porath-Detroit Asphalt Company

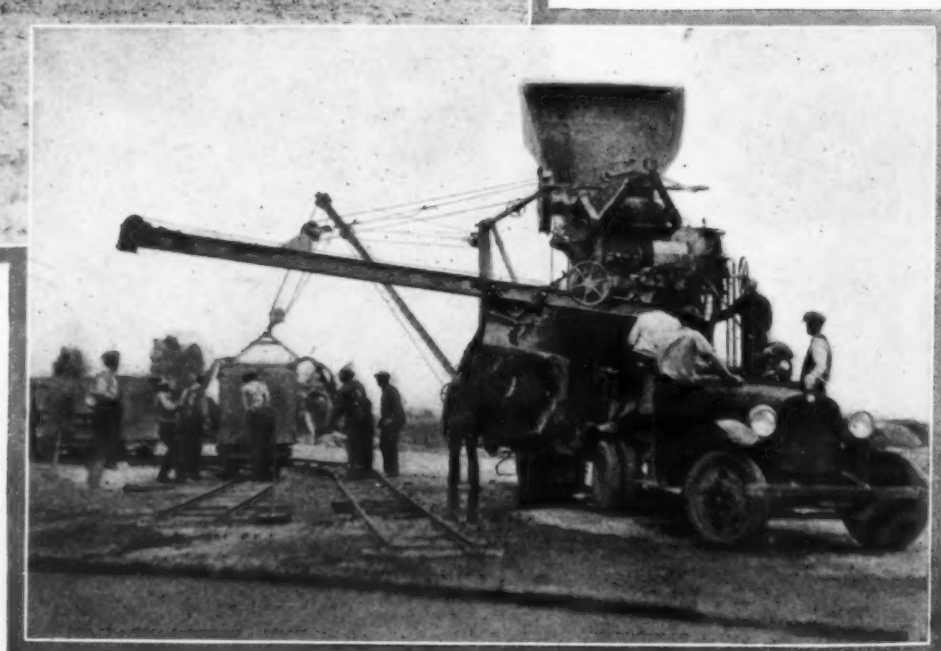
is laying a concrete pavement 30 ft. wide and 8 in. in thickness. Lack of heavy grades makes it economical to feed the Rex paver by industrial haulage. Aggregates are loaded in batch boxes at the storage yard where the 5-car trains are run under a Butler hopper bin which is kept filled by a Thew crane equipped with a 1-yd. clamshell bucket.

The trains are hauled to the mixer by Plymouth gasoline locomotives. The haulage equipment consists of 17 Lakewood cars and two 7-ton locomotives.

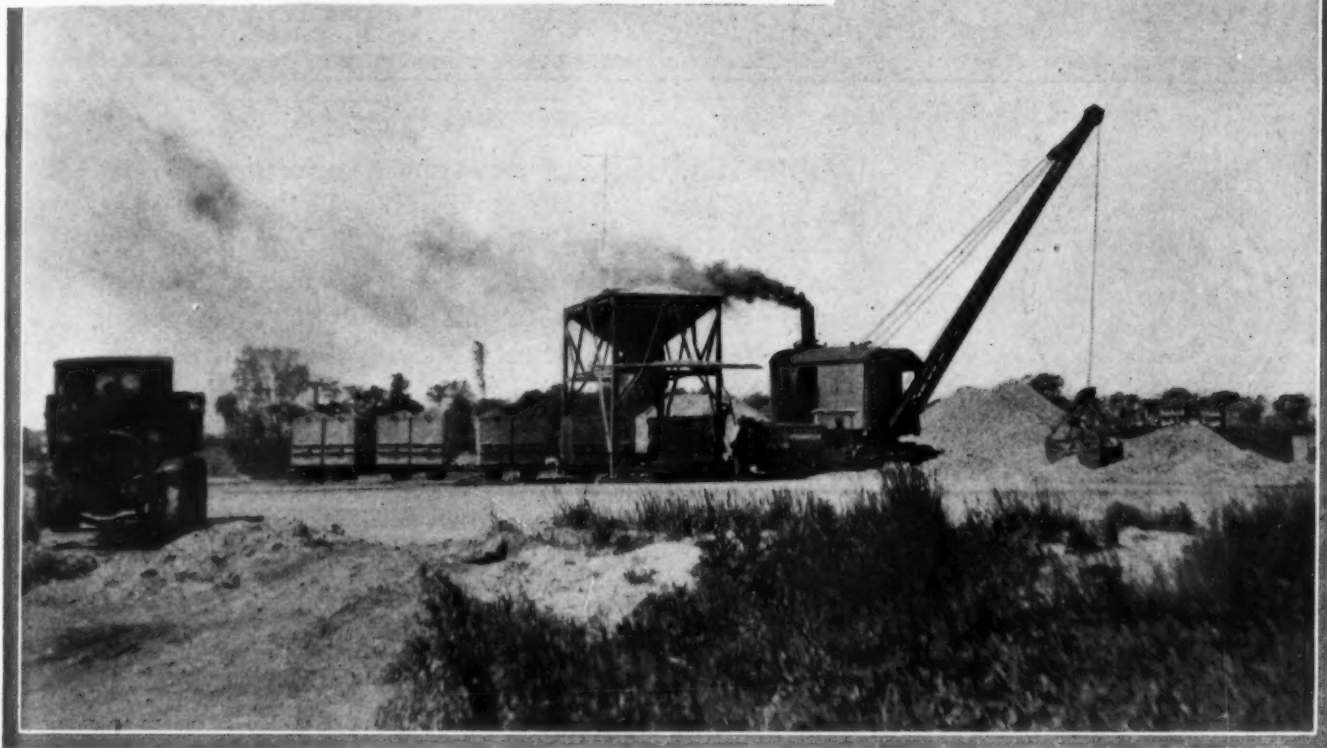


A pavement 30 ft. in width provides plenty of room in which to work. The photograph at the left shows the paver discharging a bucket load of concrete.

The paver is working as a central mixing plant in the photograph at the right, the concrete being carried by truck to a point some distance away.



or Highway Contractors



Above—The material yard

Below—A trainload of aggregates at the paver



Ransome Concrete Machinery Co.

Dunellen

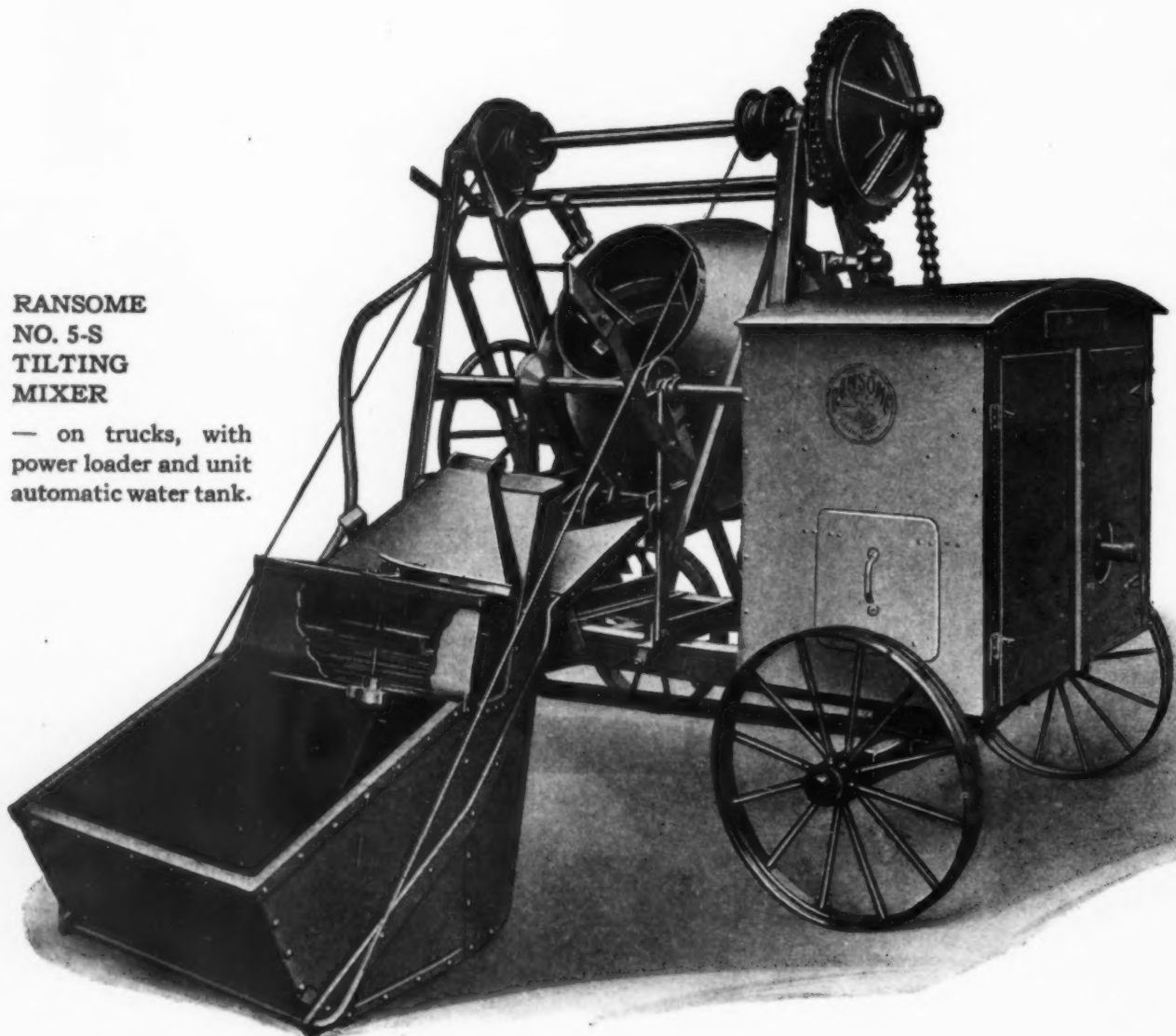
New Jersey



A GAIN, Ransome shows the way in practical development in the small mixer field. Here's the new Ransome 5-S machine: Automatic Water Tank built into the Power Loader; Tapered Timken Roller Bearings in the spindle; short wheel base; narrow frame; large wheels; a drum that returns automatically to the loading position when through discharging; fast loading and quick discharge; simple—one lever to charge and one hand wheel for discharge; and Ransome made and Ransome backed throughout.

**RANSOME
NO. 5-S
TILTING
MIXER**

— on trucks, with
power loader and unit
automatic water tank.



Ransome Concrete Machinery Co.

Dunellen New Jersey



**RANSOME
NO. 5-S
TILTING
MIXER**

— note the simple,
strong construction.
One lever for loading
—one wheel for dis-
charge.



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PITTSBURGH, Pa.
Ruane Machinery Co.
RICHMOND, Va.
Ed. F. Phillips
SAN ANTONIO, Texas
Brandt Iron Works
SAN FRANCISCO, Cal.
Ransome & McClelland,
Inc.
SEATTLE, Wash.
Washington Machinery &
Storage Co.
SPOKANE, Wash.
General Machinery Co.
SPRING LAKE, Mich.
W. H. Anderson Tool &
Supply Co.
ST. LOUIS, Mo.
Central Equipment Co.
SYRACUSE, N. Y.
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Tampa Machinery Co.
TOLEDO, Ohio
National Supply Co.
TORONTO, Ontario
Clare Osborn Ltd.
VANCOUVER, B. C.
B. C. Equipment Co.
WATERTOWN, N. Y.
Lou B. Cleveland
WEST PALM BEACH, Fla.
Duo Sand & Rock Co.

323

You ain't seen nuthin'—

Until you've looked this newest Ransome over. That automatic water tank—built as an integral part of the power loader and arranged so that the water gets into the drum just ahead of the dry aggregates—is only part of the eyeful! There's the automatic return of the drum to loading position when the hand-wheel is released; the double slat and anti-balling blades in the drum; the heavy "I-Beam" yoke with its machined trunnions; the Timken Tapered Roller Spindle Bearings; and—well, ask the nearest Ransome Agent, or write us for Bulletin No. 117-A.

Turning a Liability Into an Asset

Enterprising Indianapolis Realtor Moves Hotel Instead of Tearing It Down

WHEN the War Memorial Commission at Indianapolis made its plans to transform five blocks in the heart of the city into a Memorial Park, it was faced with the necessity of removing a number of buildings. One of them was the Haugh Hotel, a 6-story reinforced concrete structure. The cost of wrecking the hotel was estimated at \$15,000, but a wide-awake realtor of the city, Z. B. Hunt, appeared in the guise of a Santa Claus with an offer of \$6,500 for the building as and where it stood. He proposed to move it to a vacant lot two blocks distant. The



Turning the hotel at new site. The foundation can be seen at the left

Commission accepted his offer.

The general contract for placing the building in its new position was given to the Ostrom Realty and Construction Co. of Indianapolis. The moving job was sublet to the Kress-Oravetz House Moving Co. of Pittsburgh.

The building is 50 ft. wide by 70 ft. long and has a weight of 2,500 tons. Its new location was on the same side of the street as the old and the building had to be turned twice in moving about 600 ft. The

one spot in the line which caused the city officials a little uneasiness was the crossing of Pennsylvania Street, a main

The hotel crossed Pennsylvania Street in the dead of night. The roadway looks like a four-track trunk line



thoroughfare, but this point was expeditiously passed between the hours of midnight and 4:30 a.m.

Heavy planks were laid beneath the cribbing which supported the rails on which the rollers rested. The pressure per square foot was about 1,100 lb. As the pressure from a 5-ton truck loaded with gravel runs up to 18,000 lb. per square foot, the damage to concrete sidewalks from moving the building was slight and to the streets none.

A feature which Mr. Ostrom emphasizes for the benefit of

realtors and contractors embarking on this kind of enterprise is that 6 ft. of leeway is necessary at the edge of the building for cribbing to carry the runner. A second Indianapolis citizen followed Mr. Hunt's encouraging example and bought one of the Commission's condemned buildings. But when he undertook plans for moving it he found his lot too narrow for the cribbing, and he is now in the uncomfortable predicament of having one perfectly good building with no place to put it.

Georgia Vies With Maine

Southern Road Building Record Set Up by Atlanta Outfit

WHEN J. Clyde Brown, who is superintendent of a road building job down in Georgia, picked up a copy of the October issue of *Successful Methods* and read about the remarkable speed which Carlo Bianchi had been making in laying concrete in Maine, he decided that it was time the readers of *Successful Methods* heard from the South.

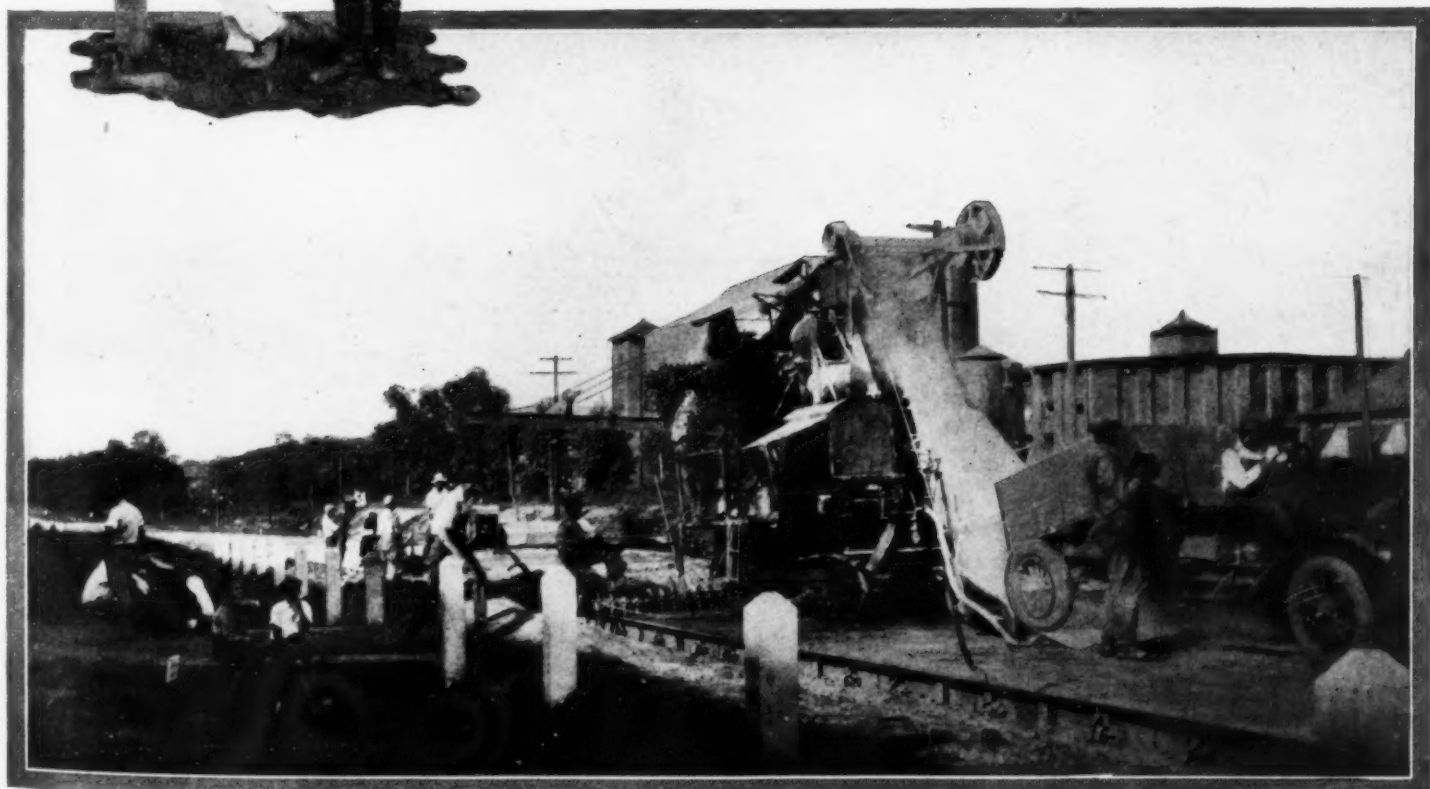
"I believe this is in the same class with my friend, Carlo Bianchi up in Maine, whose work was described in the last issue of *Successful Methods*," is Mr. Brown's opening salutation in the letter which enclosed the picture which appears at the bottom of this page.

J. Clyde Brown, superintendent, and T. B. Thorsen, plant foreman, discussing increased production. The results of their discussion may be seen below

The road which Mr. Brown is building is in Troup County near Hogansville, Georgia, and the contractors are the J. B. McCrary Company of Atlanta. The contract included 7.2 miles of concrete pavement and it was finished in 70 working days. About 40,000 cu.yd. of excavation was necessary. Incidentally Mr. Brown and his outfit captured a \$100 prize offered by Yancey Brothers, equipment dealers of Atlanta. This prize was won by laying 1,200 lin.ft. of road in 11½ hours working time. This was accomplished on August 19.

The paver used was a Rex 21-E and the concrete was finished with an Ord finishing machine. Hotchkiss forms were used. A Koehring subgrader and a Buffalo-Springfield 10-ton roller prepared the subgrade. The materials were brought to the job in small trucks which hauled them from a yard which was equipped with a Blaw-Knox batching plant and a Northwest crane for handling the aggregates.

If there are any other readers of *Successful Methods* in different parts of the country who are in the same class with Messrs. Brown and Bianchi, this magazine will be glad to hear from them. Such performances set the pace for the industry and one of the chief purposes of *Successful Methods* is to tell its readers how the leaders in the construction field are doing their work.

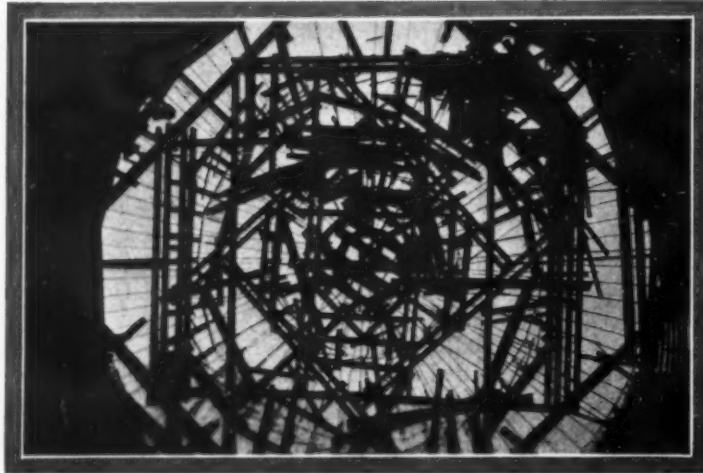


Porto Rico's New Capitol

Reinforced Concrete Structure
Faced with White Marble Will
House Insular Government

ANOTHER monumental building has been added to the long list of stately structures that house the governments conducted under the American flag. The Island of Porto Rico, which has been owned by the United States for almost 30 years, has a new Capitol in San Juan, which is now nearing completion. It is a reinforced concrete structure faced with white Georgia marble. It is 400 ft. long, 100 ft. wide and is surmounted by a dome 80 ft. in diameter.

The photographs which accompany this article were sent to *Successful Methods* by one of its readers, Francisco Pons, of Santurce, Porto Rico, to whom the contract for the concrete and marble work was let about two years ago. Mr.



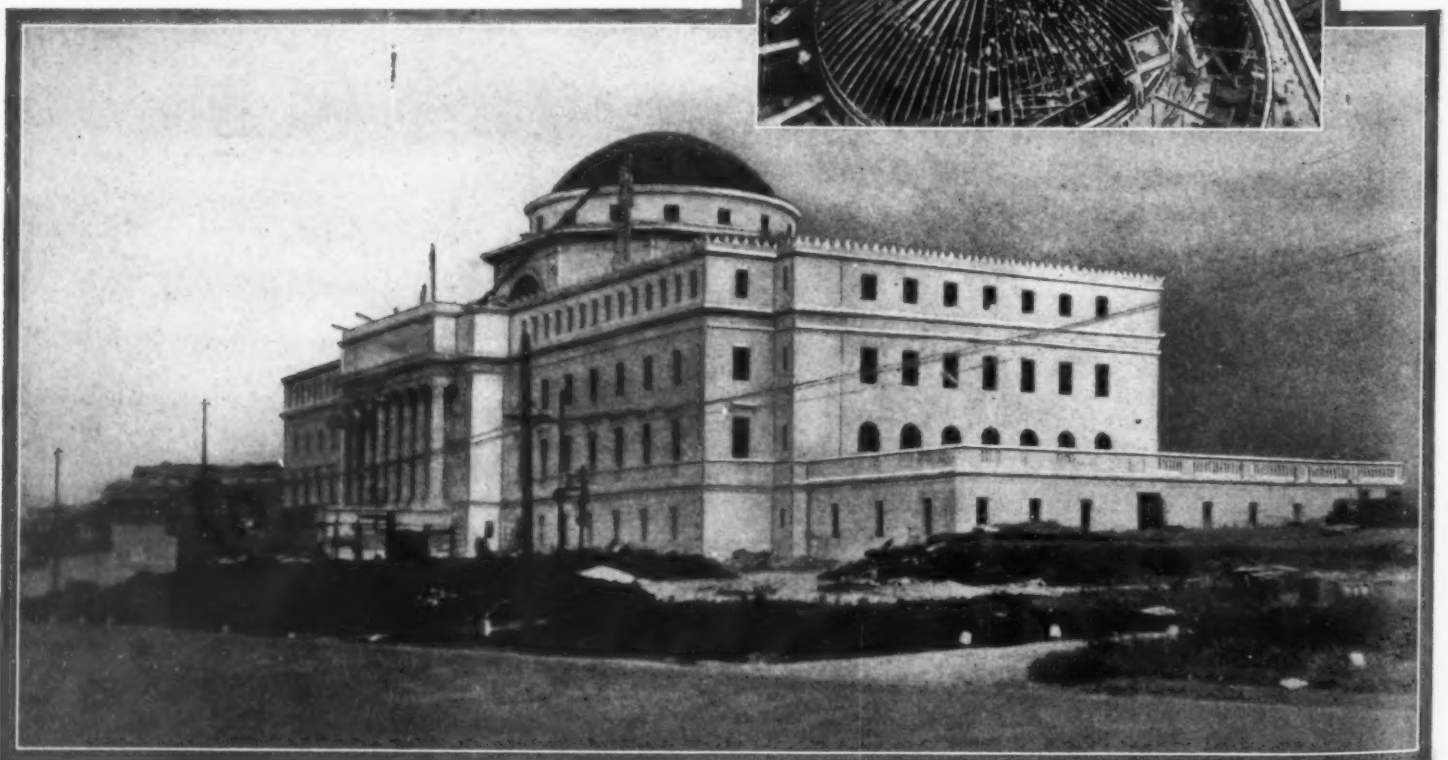
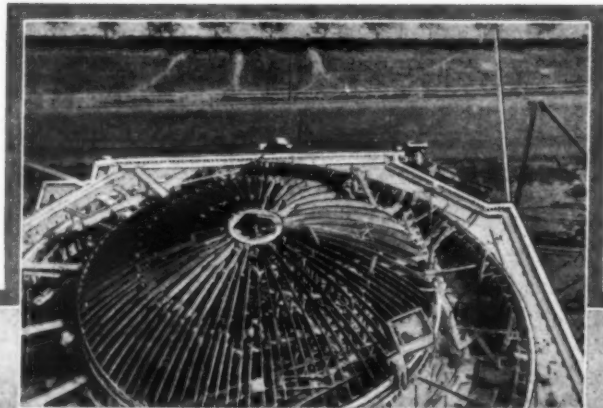
Looking straight up through the center of the dome while the forms were being set up

Pons has acted as his own superintendent in handling the concrete work and sublet the marble work to the Georgia Marble Company. The concrete for the walls was poured directly behind the marble, using the marble as an outside form.

The upper photograph on this page, which shows a most unusual view of the form work of the dome, was taken from the ground looking directly up through the center of the dome, and shows clearly the I-beam grillage which was used to support the forms without shoring from the

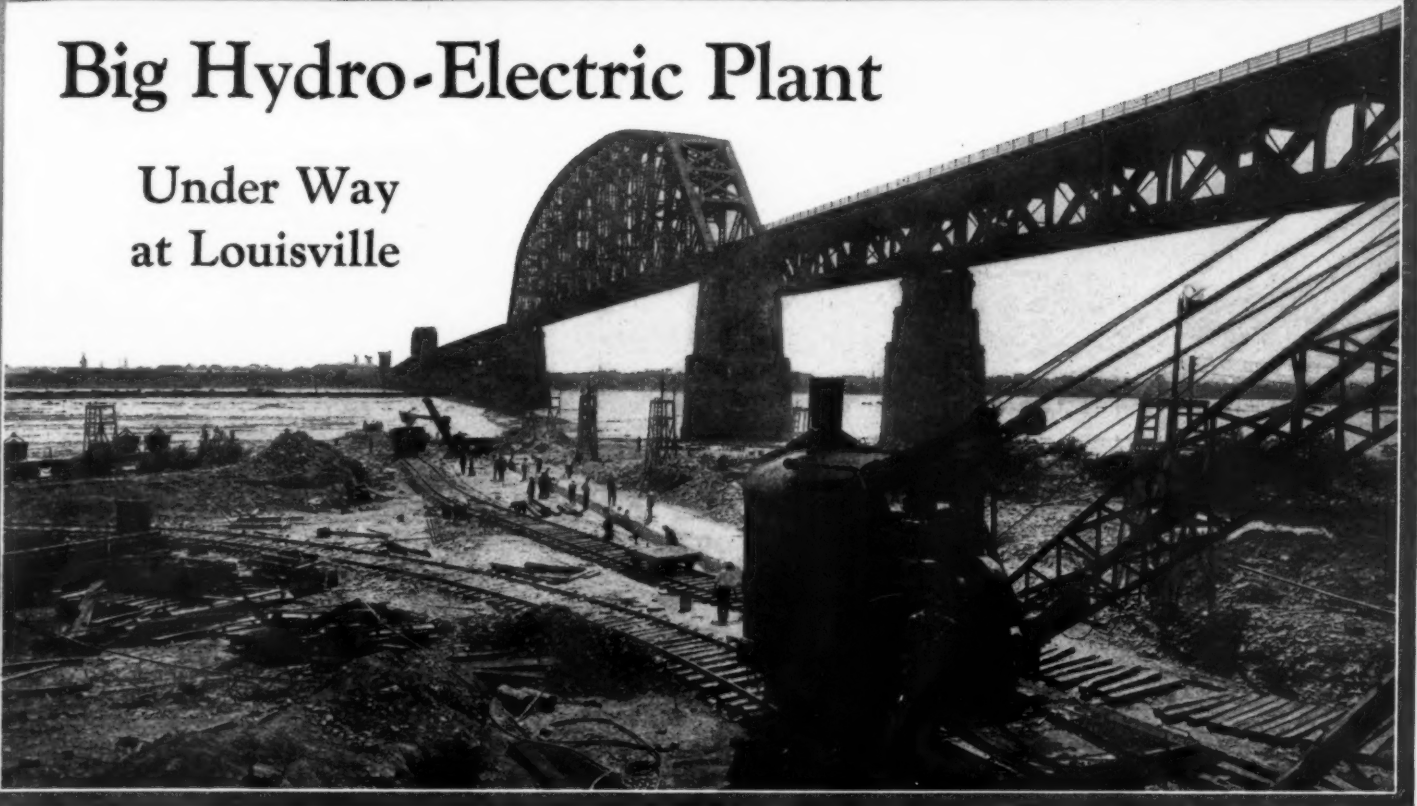
ground. The dome when completed will be covered with Georgia marble like the rest of the building. The new Capitol will cost about \$1,500,000.

Porto Rico's new Capitol, which is nearing completion, is shown in the large picture. The small photograph at the right was taken from the top of the concrete chuting tower and shows the form work in place on the dome ready for pouring the concrete which later will be covered with white marble.



Big Hydro-Electric Plant

Under Way
at Louisville



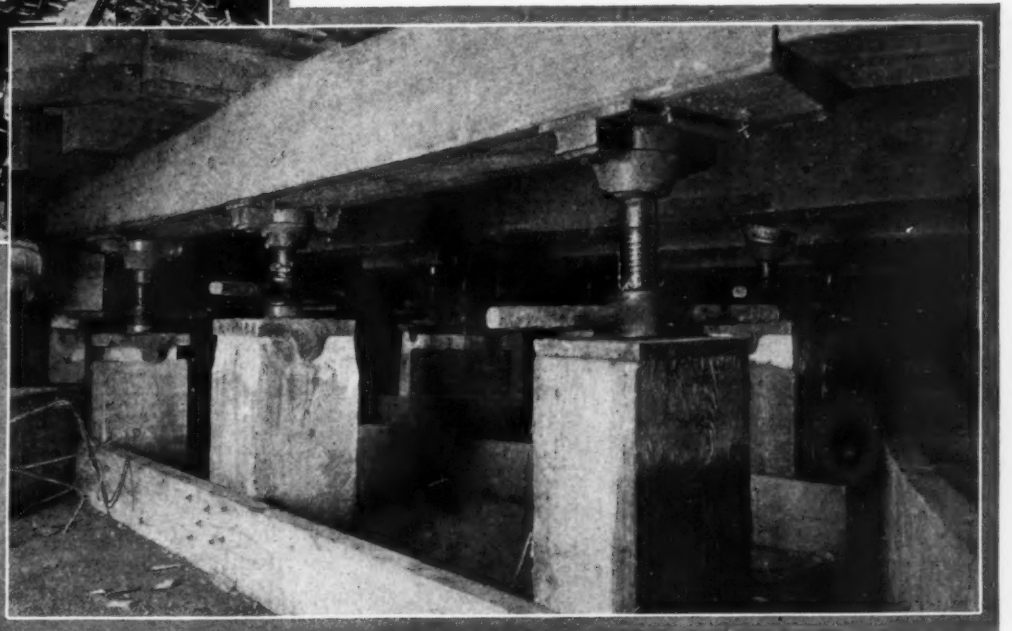
Construction of Dam and Power House Will Take at Least Three Years



Draft tubes under construction. The method of supporting the forms for the eight big draft tubes is shown at the right

A JOB of the magnitude of the hydro-electric plant now being constructed in the Ohio River at Louisville, Ky., requires most careful planning. Laying out the construction plant and drawing up the working program demand as much thought as the designing of the dam and power house. The Byllesby Engineering and Management Corporation gave its construction engineers 2 years in which to prepare plans for carrying on the work. The results of this thorough preparation are now making themselves evident.

An ell shaped dam 8,650 ft. in length and a power house to furnish 108,000 hp. at the maximum head of 37 ft. from 8 turbine-generator units when completed, with provision



Pouring concrete on
the power house
site during the con-
struction of the
draft tubes



for 2 additional units to be installed later, are included in the construction. License for the project was granted in September, 1925. In the two remaining working months on the river in 1925, the upper box cofferdam of the power house site, connecting the head of Rock Island with the Kentucky shore, was built. The lower cofferdam, at the foot of the island, was put in this year. The locations and heights of these cofferdams were the subject of much serious

These two big cranes both saw service at Muscle Shoals



thought, as the builders were anxious to gain the happy mean of long working season and low cost.

July, August, September, October, and November are the 5 months when river stages are normally such as to permit work. In order to take full advantage of this season of low water, the power house forms were built on shore during the winter and spring and were ready to be placed as quickly as foundations were completed. The fact that a 150,000 hp.

steam-electric power plant is to be constructed within a very few years adjacent to the hydro plant made it practicable to put in a standard gage railroad line and to erect shops and buildings of an unusually permanent nature.

The dam and hydro-electric plant take advantage of the only concentrated fall in the whole length of the Ohio River, —a drop of 25½ ft. in 3 miles. A canal inside the Kentucky shore has been the means of getting boats around these falls. When considering aggregates and methods of delivery for the 150,000 yd. of concrete in the dam and power house, it was decided that river gravel delivered in barges in the canal, where it would be transferred to railroad cars, was the economical combination. The cars dump into bins over the mixers. From the mixer plant, the concrete is hauled in buckets on cars. Cranes handle the buckets into the forms.

The mixer plant at the hydro-electric plant is well designed. Cement is transported from the storage house on conveyors. Sand is measured in an inundator and gravel in a batcher. There are 2 motor driven 2-yd. mixers at this plant. About 20,000 yd. of concrete are to be supplied from a mixer on the Indiana side of the river.

The dam runs upstream about a mile from the power house and Rock Island and then turns a right angle above the Pennsylvania Railroad bridge to connect with the Indiana side. The portion above the bridge is being constructed first. This work is protected by a rock fill crib cofferdam extending diagonally downstream from the Indiana side. It was originally intended to connect the lower end of this cofferdam with the bank by means of a box coffer; but the second cofferdam was found to be unnecessary, and the water is being kept out by means of small concrete, rock, and timber coffer around the dam.

The photograph on the cover of this issue shows this cofferdam under construction. The cribs were built on the bank and then were placed with the crane. They were filled with rock from dump cars and the openings then blocked with stop logs.

Openings are being left in this first portion of the dam to pass the water while the second section, from Rock Island to the bridge, is being built. When the first part has been completed to the point where the cofferdam can be removed, a second rock fill crib cofferdam will be constructed from

the Kentucky side to the angle in the dam. A light coffer will be run downstream from this angle to take care of backwater from the flow through the openings of the first section. The 39,000 yd. of concrete in the second section can then be placed.

Timber braces outside the bays in the first section are being left in place to act as frames for the gates which will be forced into place when the time comes to construct the forms for filling the bays. To make a watertight joint between frame and gate, a hose filled with air or water under pressure will be used as packing.

The floods of August and September have caused a setback to the plans of A. G. Butler, construction superintendent, who expected under average conditions to complete the dam by December, 1927, and the hydro plant by the fall of 1928. The unprecedented period of high water may postpone completion somewhat.

The hydro-electric plant is being built by the Byllesby Corporation for the Louisville Gas and Electric Co. at an estimated cost of \$7,500,000. The dam is being constructed under contract with the government, the Byllesby Corporation being low bidder on the job at \$2,056,187. The project is a waterway development for both power and navigation.

The power house site completely submerged by an unexpected summer flood



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Get after the \$25.00 prize

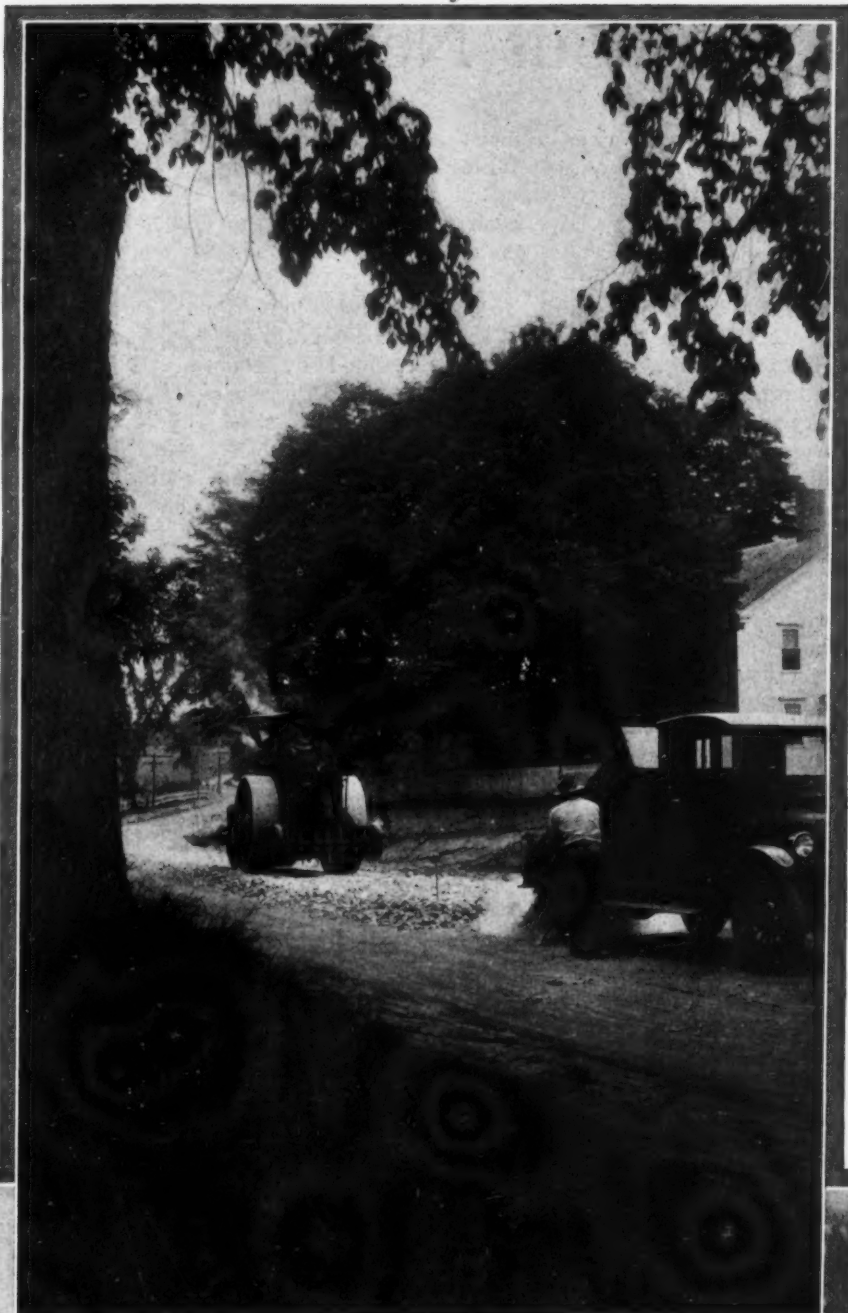
Conditions of December Contest
on Page 13

Road Building in New Hampshire

CAREFUL measurements are in order when the representative of the State Highway Department visits a road job. The photograph at the bottom of this page shows Joseph Cook (the man kneeling and wearing a straw hat) figuring out the grade on a section of bituminous macadam highway near Plymouth, N. H. The engineer is the man with the plans in his hand.

Mr. Cook is treasurer of the St. Albans Construction Co. of St. Albans, Vermont and Portland, Maine. He has been spending the summer on the New Hampshire job, taking charge shortly after work began early in June. The contract calls for the paving of a little less than a mile of road. A 5-in. course of native stone is being used for the base and the top course consists of 3 in. of lighter material brought in by rail from Lynn, Mass. The stone for the base course was obtained from two old quarries close to the job, and as may be seen from the upper photograph, was hauled in by motor truck.

The road is typical of the kind that the State Highway Department under the direction of Frederic E. Everett is building in many parts of the state. The section shown in the photographs is between Newport and Plymouth.



Famous Newspaper Gradually Acquires

WHEN a newspaper as famous as the Cincinnati *Enquirer* puts up a new building, the fact is of general interest; but when, in addition, the job involves such difficulties as have been encountered by the *Enquirer*, the operation also is of particular interest to construction men.

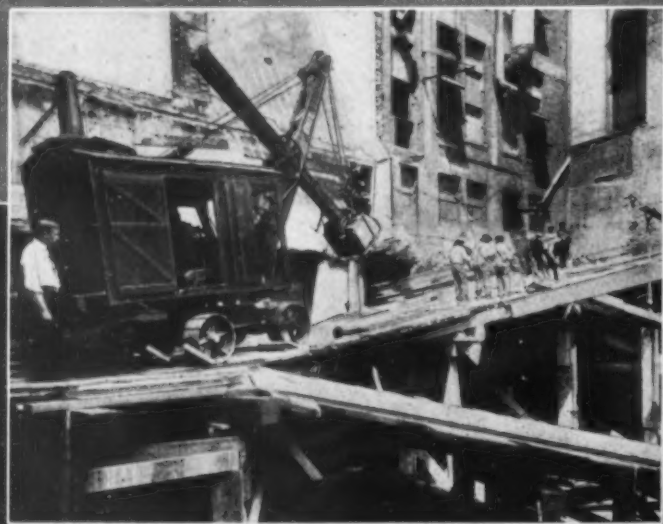
Briefly, the conditions which forced the adoption of unusual methods were threefold. First, the new building was to be erected on ground already occupied by the *Enquirer*, and the newspaper plant was to be kept in operation during all the time of construction; second, the foundations were to be carried 28 ft. below those of the adjoining buildings; and third, the soil was a loose gravel. The first condition necessitated the wrecking of the old building, and the erection of the new, in sections, and reduced the working space to a minimum.

Because of the narrow space and the condition of the soil, as well as the depth of the footings of the new building, it was impossible to shore the wall of the Palace Hotel. Instead, 5-ft. sections were knocked out at intervals along

In Order to Keep Presses Running Cincinnati Enquirer's Building Is Constructed in Sections

the wall of the hotel, and pits were sunk to the extra depth of 28 ft. These pits were boxed with 12-in. lags as they were dug. Forms for the piers were built inside the pits and filled with a rich mixture of quick-setting concrete. The space between the concrete pier and the old wall was filled with hard brick laid in cement mortar, and the joint was made with wedge-shaped brick facing two ways.

As the piers set, new pits would be started, until, finally, the entire wall was underpinned with solid concrete. Keyways and dowel bars were used to insure a good bond between the piers.



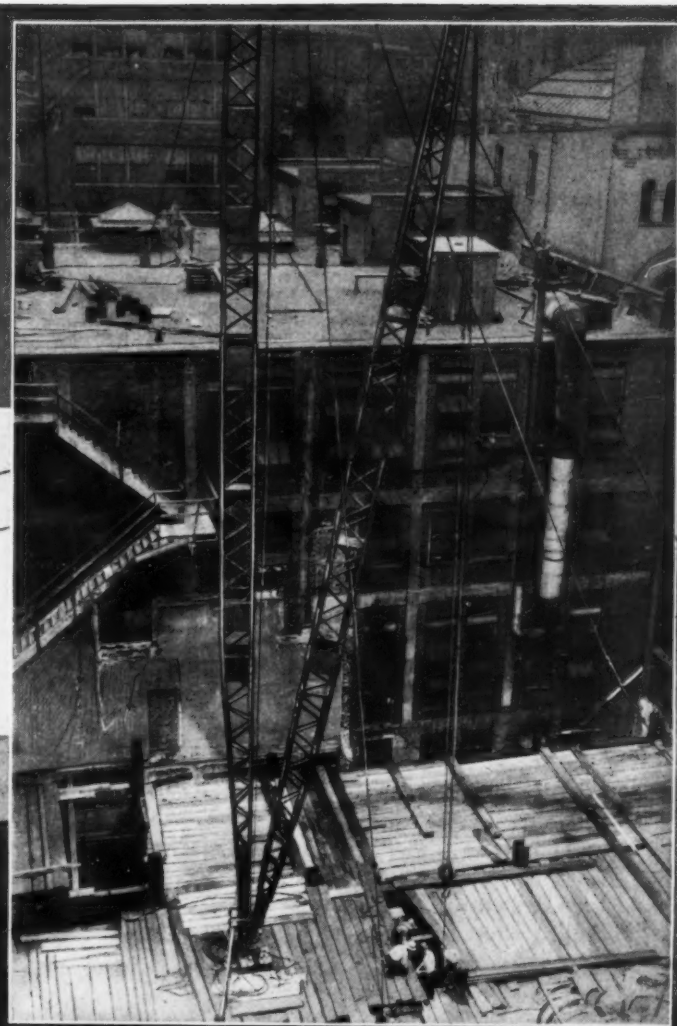
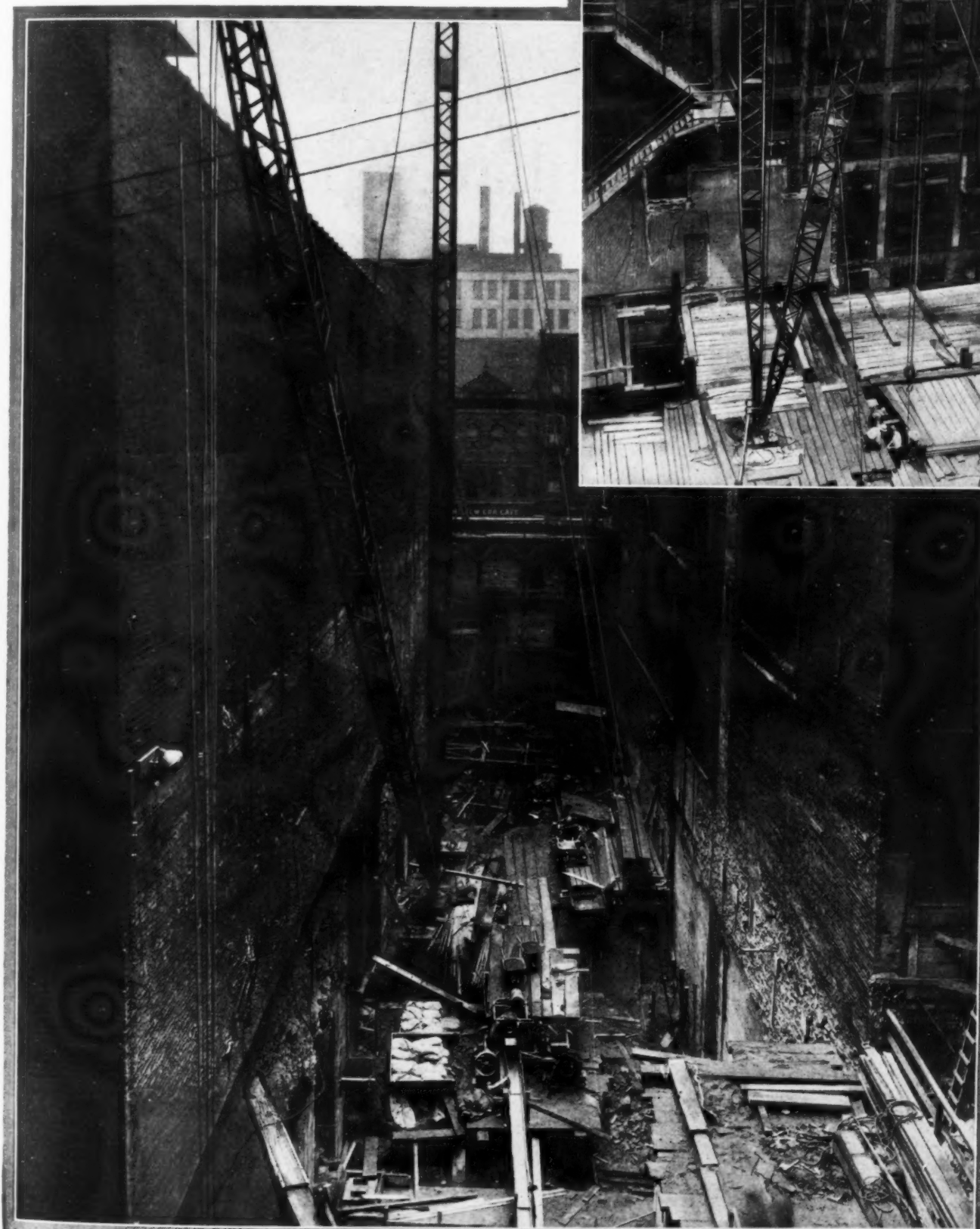
This shovel dug itself in so deep that it took a couple of days to get it out. The upper photograph shows the shovel climbing out over the runway built for the trucks.

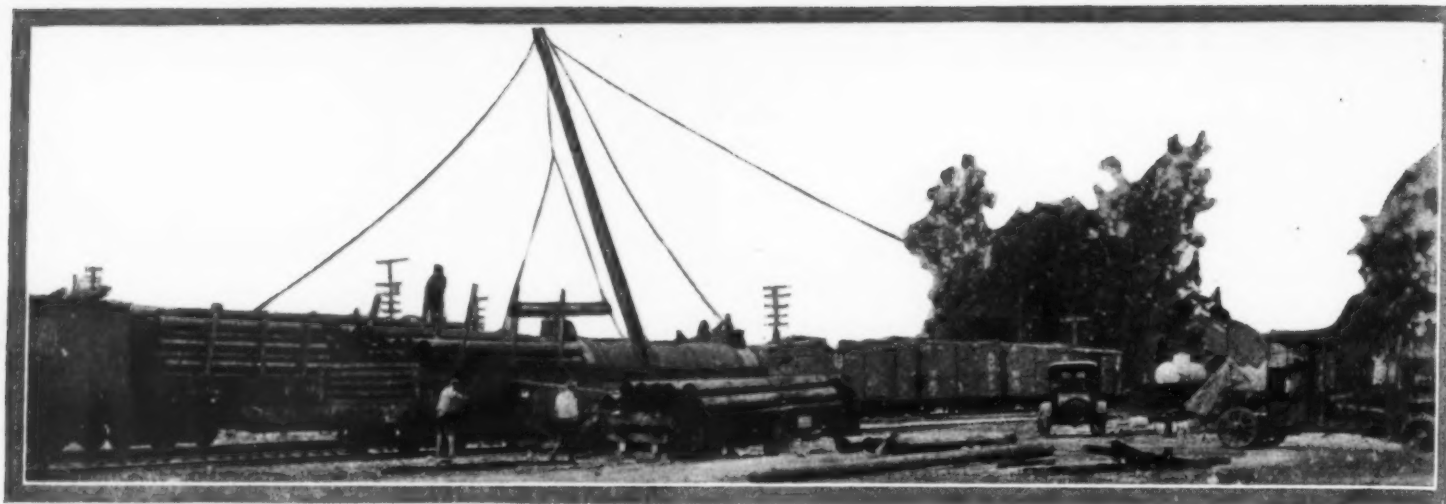


Its New Home

Edwin M. Pratt is superintendent of the job for the George A. Fuller Construction Co., general contractors. His right bower is Peter R. Haley, the foreman. The work is being supervised by E. W. Pinkham, resident engineer for Lockwood, Greene & Co., the architects.

These two photographs give a good idea of the close quarters in which the work of putting up the new Enquirer Building was carried on.





A Million Dollar Pipe Line

Traverses 52 Miles of California
 Countryside to Take Natural
 Gas Into Los Angeles

A STEEL pipe line 52 miles in length and costing \$1,000,000 was constructed recently in California for the Midway Gas Company. The Foundation Company handled the contract and completed the work 68 days



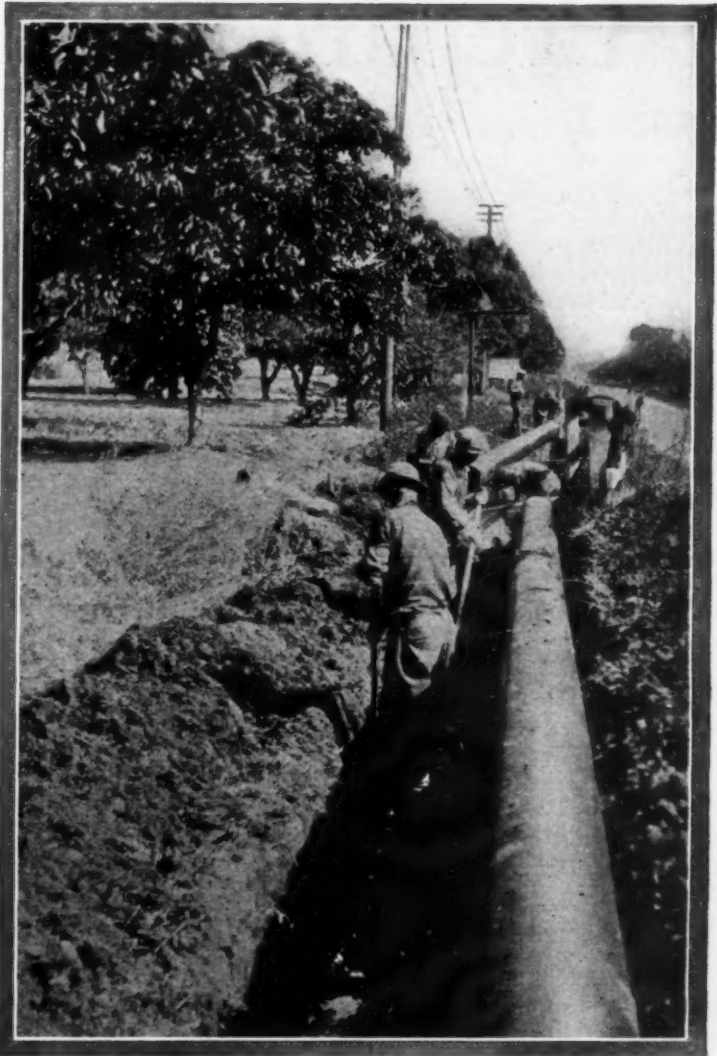
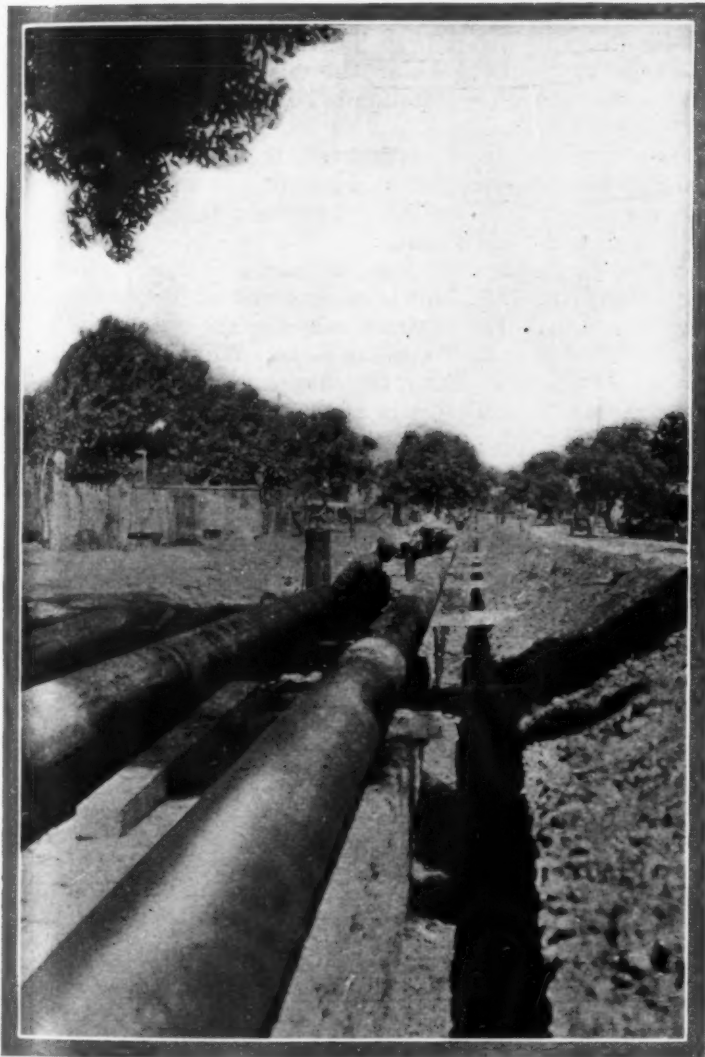
Above — This long section of pipe already has been welded before being lowered into the trench

At left—One of the two ditchers which dug the trench in which the pipe was laid

after construction began in spite of various difficulties and unforeseen delays.

This pipe line is now bringing natural gas from Ventura to Los Angeles. The pipe itself is 12½ in. outside diameter and weighs 29.44 lb. per foot. It was manufactured in Pennsylvania and brought to California by rail where it was unloaded with great care in order to avoid flattening or otherwise distorting the joints. Every piece was skidded down and lowered gently into position. The unloading operation is shown in the picture at the top of page 32.

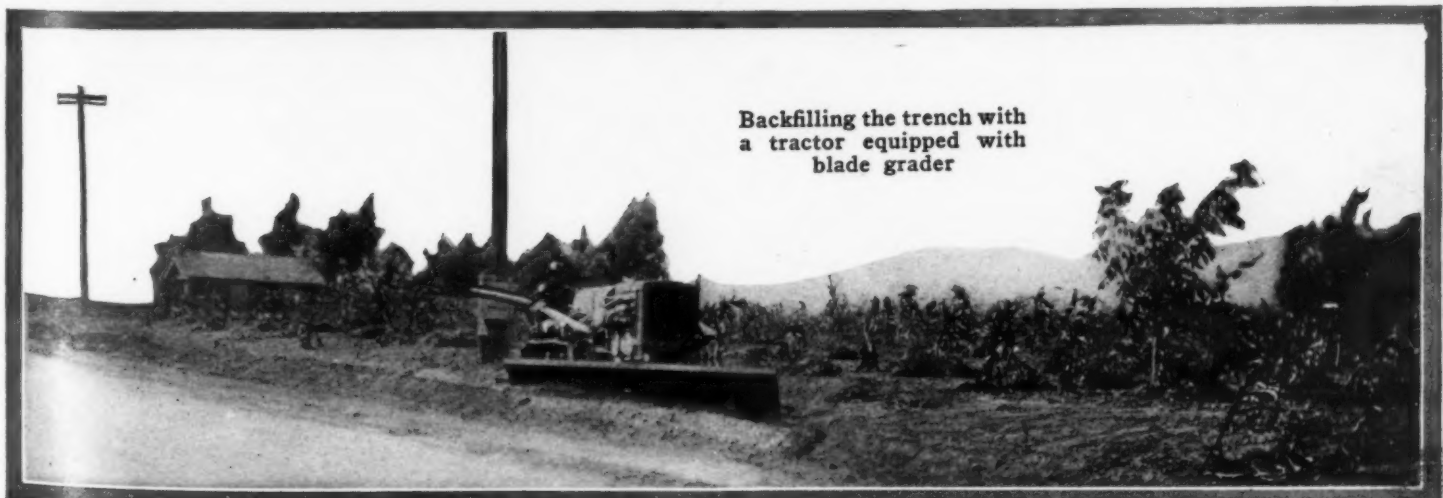
The actual digging of the ditch was done with two Buck-eye ditchers and the work progressed so fast that from 5 to 7 miles of the ditch were always open, making it necessary to provide uniformed patrols to safeguard traffic along



These two photographs show typical sections of the long pipe under construction

the highway which the pipe followed close to the pavement.

One ditcher started from each end of the job. The welding gang consisted of 18 men with several helpers, and they did as much of the welding as possible on top of the ditch. Joints in the pipe which were not too sharp also were welded on top of the ditch, although in some cases where this was done it was necessary to cut the pipe and then reweld it in the ditch. The photographs which accompany this article give a good idea of how the work was handled. Caterpillar tractors equipped with blade graders were used for backfilling.



Backfilling the trench with a tractor equipped with blade grader

Preparedness Means Profits

THE State of West Virginia is proceeding along sound, conservative lines in the construction of its new Capitol at Charleston. Cass Gilbert of New York, who has designed some of the most notable structures in the United States, prepared plans for a monumental building facing the Kanawha River. Instead of rushing the new Capitol through to completion, the State decided on a more leisurely policy and is putting up the building in three units. The first wing on the Capitol already has been completed and is in use, and work has just begun on the second wing. These two wings will be practically identical and will be connected later by the main section of the building, which as said before, will face the river.

The photograph at the bottom of this page shows plainly the plan of construction. The completed wing is at the right and excavation for the second wing is just getting under way to the left. The main building will occupy the intervening ground. The Kanawha may be seen in the background.

All three of the photographs which accompany this article were taken a few days after work began on the second wing. The lower photograph on the opposite page shows the contractor's Erie shovel digging itself out of sight in the excavation for the foundation. The upper photograph proves that it isn't a universal habit among contractors to wait until the last minute before purchasing the machines needed for a construction job. The three box-like objects on wheels are three Ransome one-sack mixers lined up in battle array and ready for the word to advance

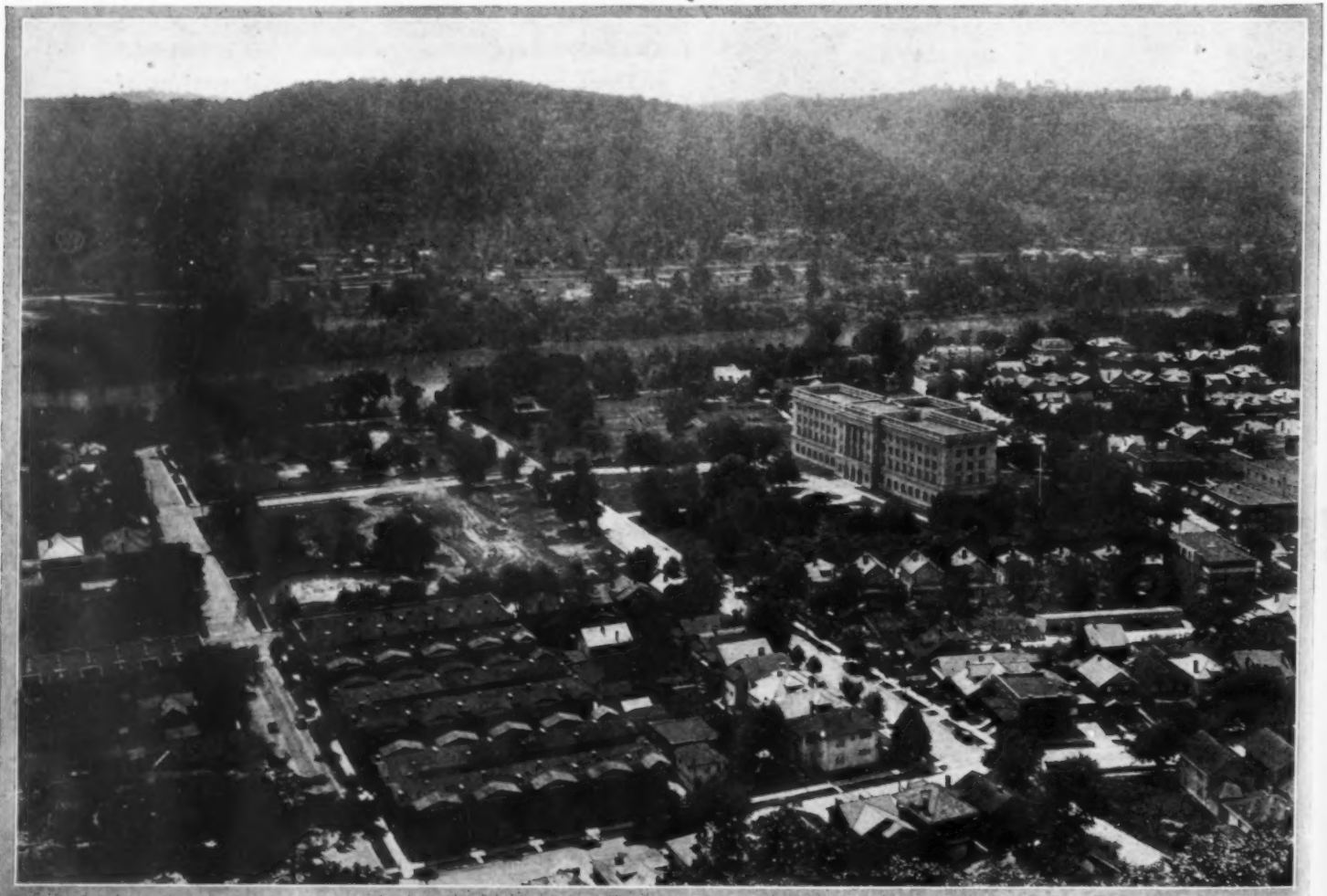
Builders of West Virginia's New Capitol Practice Forehandedness

on the new Capitol. The James Baird Company of New York, which is handling the job, believes in the theory that one mixer on the job is worth ten in transit, and the trio of waiting Ransomes is the result. Also it may be that its adherence to that particular theory is one of the reasons why the Baird organization is building West Virginia's new Capitol.

Like the wing already completed, that now under construction will be four stories in height and will be 300 ft. in length by 60 ft. in width. The main building will be 570 ft. long and 160 ft. wide.

Charles Q. Hequembourg is in charge of the work for Cass Gilbert and E. A. Judd is superintendent for the James Baird Company. The contract calls for the completion of the second wing in 375 working days. When finished the new structure will house the Supreme Court and the Public Service Commission in addition to a number of less important departments of the State government. The contract price for the unit now under construction is \$1,242,983.

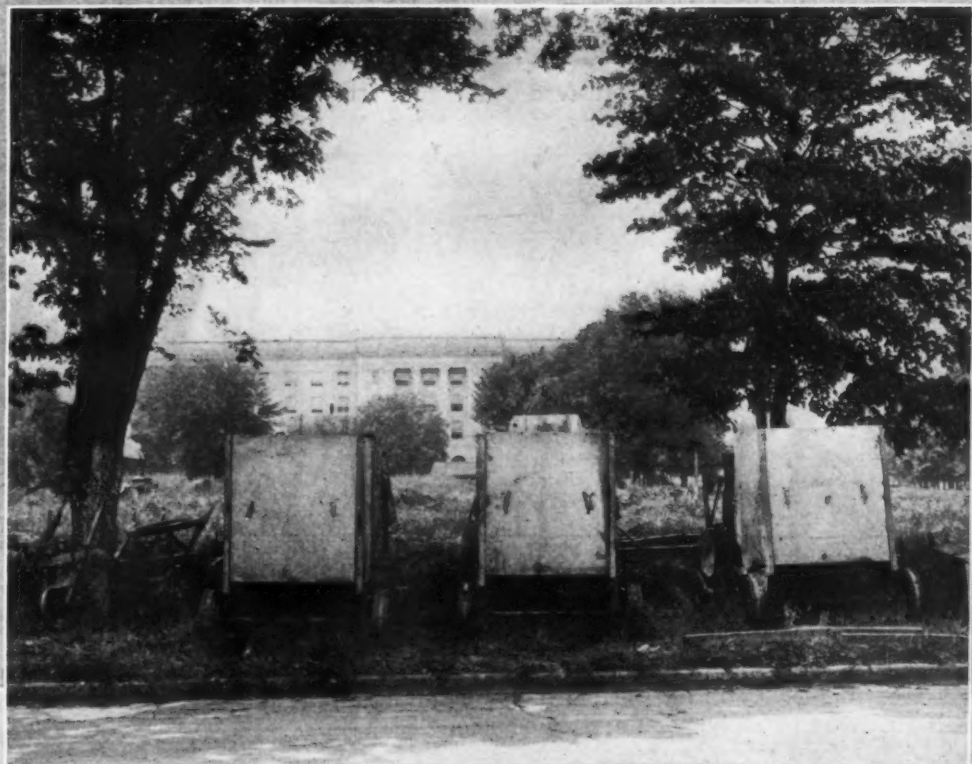
A general view of the site of West Virginia's new Capitol. The finished wing is shown at the right.



in Construction Campaign

There was no waiting on the Capitol job when the time came to begin pouring concrete. These three mixers were on the job long before they were put to work.

Excavating for the new wing with the completed wing in the background. The main building will connect the two wings.



New Equipment on the Job

Ditcher Cuts Narrow Trench

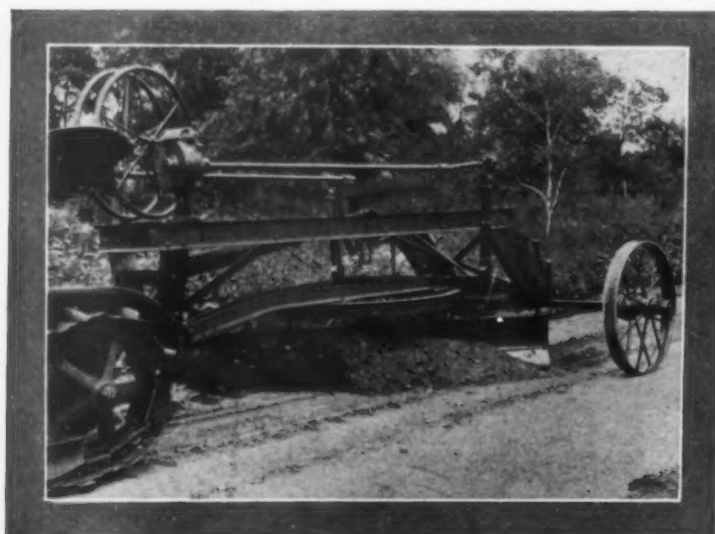
A ditcher designed especially for cutting narrow trenches for pipe lines is now being manufactured by the Barber-Greene Company of Aurora, Illinois. This machine is the same as the standard ditcher manufactured by the same company, with the exception of the boom which is so constructed that it cuts a ditch 4 in. wide and 18 in. deep. The



machine shown in the accompanying photograph was working for the Outdoor Lighting Company of Elmhurst, Ill., where it cut 1,000 ft. an hour on several occasions.

Small Grader for One-Man Control

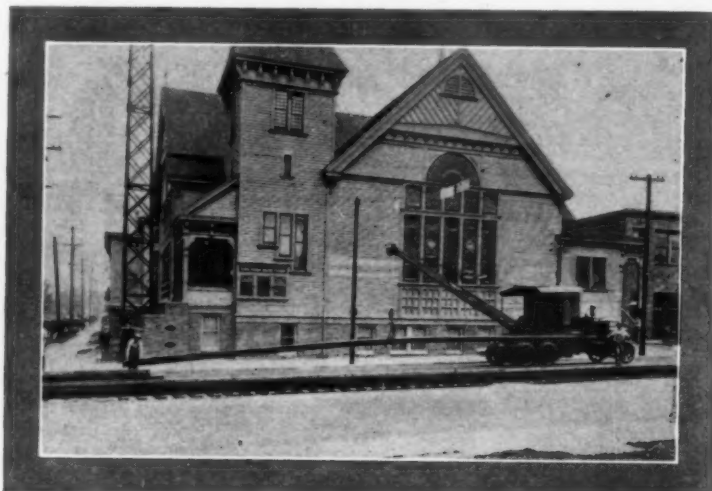
A new small grader, known as the Whippet, has been put on the market by the Stockland Road Machinery Company



of Minneapolis, Minnesota. This machine is pulled by a tractor and is a one-man outfit.

Crane Mounted On Six Wheel Truck

A number of the owners of Universal cranes have recently been having them mounted on 6-wheel trucks and one of these outfits is shown in the accompanying photograph en-



gaged in handling trolley rails in a city street. It is owned by the Key Electric Railway System and is shown at work in Oakland, California. This particular crane is mounted on a Doane 6-wheel, 4-wheel drive truck. The rails it is handling in the photograph are 60 ft. in length.

Trailers Used to Carry Batch Boxes

On a street widening job at Grosse Pointe Park, a suburb of Detroit, Meredith & McVaughn, contractors, are using a Fruehauf trailer for carrying their batch boxes from the



material yard to the mixer. This method of handling batch boxes has worked out very well, especially in the heavy traffic which is the usual thing along the roads which the trailers are using.

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